REPORT RESUMES

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RE-EDUCATION OF UNEMPLOYED AND UNSKILLED WORKERS.
BY- BROOKS, LYMAN B. AND OTHERS
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PROGRAMS WERE PLANNED AND DEVELOPED TO PROVIDE UNSKILLED WORKERS WITH THE TRAINING NECESSARY TO COMPETE IN THE CURRENT LABOR MARKET. SUBJECTS WERE ASSIGNED TO FOUR GROUPS--(1) THE MAIN EXPERIMENTAL GROUP, (2) THE SUBSIDIARY EXPERIMENTAL GROUP, (3) THE SUBSIDIARY CONTROL GROUP, AND (4) THE MAIN CONTROL GROUP. THE GROUPS RECEIVED VARIOUS TREATMENTS OF INSTRUCTION AND COUNSELING. DATA WERE COLLECTED IN FIVE AREAS AND ANALYZED COMPARATIVELY. IT WAS GENERALLY FOUND THAT INDIVIDUAL GUIDANCE ENHANCES ATTITUDE IMPROVEMENT, THAT THE TRAINEES RECEIVED BETTER EMPLOYMENT, AND THAT GENERAL EDUCATION IMPROVES THE SUCCESSFUL PERFORMANCE OF A WORKER. THE IMPLICATIONS FOR FURTHER RESEARCH INDICATE A NUMBER OF AREAS THAT NEED ATTENTION. GENERAL EDUCATION SHOULD BE A BROADENING EDUCATIONAL EXPERIENCE, AND BE DIRECTED TO THE FAMILY UNITS AS WELL AS THE TRAINEES. (RS)

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RE-EDUCATION OF UNEMPLOYED AND UNSKILLED WORKERS

COOPERATIVE RESEARCH PROJECT NO. D-054

Lyman B. Brooks
William M. Cooper
James A. Bowser
John T. Blue
William F. Brazziel

NORFOLK DIVISION, VIRGINIA STATE COLLEGE
NORFOLK, VIRGINIA

1964

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TABLE OF CONTENTS

CHAPTER PAGE

LIST OF TABLES iv

I. INTRODUCTION 1

Background of the Project.................................. 1

The Need for the Norfolk Project.................... 2

Program to be Demonstrated........................... 3

Design of the Project.. 5

Characteristics of the Groups.......................... 7

Special Problems Met.. 8

Presentation.. 9

II. DEMONSTRATION RESEARCH PROGRAM (PROCEDURE)............ 11

Recruitment and Selection................................. 11

General Education.. 19

Vocational-Technical Education....................... 49

Job Placement and Follow-Up Phase................ 70

Sources of Data.. 73

III. ANALYSIS OF DATA 76

Follow-Up and Work Experiences of Trainees.......... 76

Effects of Vocational Trade Education............... 88

Effects of General Education.............................. 97

Probable Effects of Placebo Experiences............. 107

IV. CONCLUSIONS AND RECOMMENDATIONS........................ 111

Summary, Conclusion and Recommendations............. 112

Summary of Findings... 113

Conclusions.. 119

Recommendations.. 124

CHAPTER PAGE

V. BIBLIOGRAPHY.. 127

VI. APPENDICES.. 132

Appendix I: Characteristics of Groups............ 133

Appendix II: Employment and Earnings............. 140

Appendix III: Group Reactions to Final Interview Questions................ 144

Appendix IV: Group Reactions To Jobs Held........ 147

Appendix V: Forms Used in Securing Data.......... 152

LIST OF TABLES

TABLE PAGE

I. Final Grade Distribution of Trainees Who Passed and Those Who Failed the General Aptitude Test Battery . . .18

II. Cumulative Report of Norfolk State Trainee Job Experience at the End of The Period, November 15, 1963 to April, 1964 72

III. Total By Trades 72

IV. Number and Percent of Employed and Unemployed in Groups A, B, C, and D 77

V. Occupational Status of Graduates of Project D-054 One Year After Graduation 78

VI. Distribution of Graduates of Project D-054 Working in Trade or Related Area by Trade 79

VII. Reasons Trainees Give for Not Working in Trade Trained For 82

VIII. Number of Trainees in Experimental Group Who Did Not Choose to Work at Trade Trained For 83

IX. Frequency Distribution of the Number of Months Groups A and B Worked in Trade or Related Areas. 85

X. Approximate Weekly Earnings of Men While Working in Trade Trained For 86

XI. Summary of Number Employed in Experimental and Control Groups 89

XII. Statistical Difference Between Weekly Earnings of Control and Experimental Groups 90

XIII. Distribution of Earnings of Experimental & Control Groups 90

TABLE PAGE

XIV. Frequency Distribution of Jobs Held During Year By Experimental and Control Groups 92
XV. Number of Promotions on Any Job During The Year 93
XVI. Number of Promotions on Present Jobs 96
XVII. Attitude Towards Present Job 98
XVIII. Percent of "A" and "B" Groups Rated "Most Likely to Succeed" by the Technical Instructors 98
XIX. Summary of Test Score Changes 98
XX. Percent of Groups Employed at the End of the Follow-Up Period 99
XXI. Attitudes of "A" and "B" Groups Toward Reselection of Field of Study and Percent Choosing to Work in Other Fields 100
XXII. Comparison of Average Weekly Salaries of Groups 103
XXIII. Comparison of Methods of Securing Employment of "A" and "B" Groups 103
XXIV. Reaction of "A" and "B" Groups to Job Satisfaction Indices 105
XXV. Comparison Between Control(C & D) Groups 110
XXVI. Comparison Between Experimental Group "B" and Control Group "D" 110

INTRODUCTION

CHAPTER I

INTRODUCTION

Background of the Project

For more than a decade various officials of Norfolk State College had been deeply concerned about the [illegible] of the [illegible] from the American educational scene and the development of a [illegible] of unemployed workers. In late 1962 the College [illegible] to bring together its organized resources to tackle this problem, which is [illegible] in the American economy. Fortunately, Norfolk State College had a strong background and program in adult education, a growing technical and industrial training program, a developing program in general education, faculty members with enthusiastic interest and [illegible] of the necessary scope of the program, good working relationships in the [illegible] area, and the confidence and guidance of Dr. William F. [illegible] and Dr. Edward Brice in the U. S. Office of Education.

It is highly possible that the traditional [illegible] of vocational and technical education is one of the major causes of the [illegible] of persons from culturally deprived groups to become [illegible] in the [illegible]. Thus, in late 1962, the Project organized a team consisting of persons in five special areas: Vocational and Technical Education, [illegible]; General Education, William F. Brazziel; Guidance, [illegible]; Adult Education, William B. Cooper (who became director of the project); and Administration, Lyman B. Brooks. Later an occupational specialist, [illegible], and a social worker, Mrs. Vivian C. [illegible], were added to the team. This development of the team approach to vocational and technical education of the hard-core unemployed is one of the important contributions of the Norfolk State experiment. The success of the experiment was largely due

CHAPTER I

INTRODUCTION

Background of the Project

For more than a decade Norfolk Division of Virginia State College had been deeply concerned about the passing of the unskilled worker from the American occupational scene and the development of a hard-core of unemployed workers. In late 1959 the college decided to bring together its organized resources to tackle this problem, which it considered vital to the American economy. Fortunately, Norfolk State College had a strong background and program in adult education, a growing technical and industrial training program, a developing program in general education, faculty members with enthusiastic interest and specialities in the necessary areas of the program, good working relationships in the metropolitan area, and the confidence and guidance of Dr. William F. Carriker and Dr. Edward Brice in the U. S. Office of Education.

It is highly possible that the traditional isolation of vocational and technical education is one of the major causes of the refusal of persons from culturally deprived groups to pursue training in the field. Thus, in late 1959, the Provost organized a team consisting of persons in five special areas: Vocational and Technical Education, James A. Bowser; General Education, William F. Brazziel; Sociology, John T. Blue; Adult Education, William M. Cooper(who became director of the project); and Administration, Lyman B. Brooks. Later an occupational specialist, Withro McEnge, and a social worker, Mrs. Vivian C. Ewing, were added to the team. This development of the team approach to vocational and technical education of the hard-core unemployed is one of the important contributions of the Norfolk State experiment. The success of the experiment was largely due to the deep devotion of the project team and the instructors who dared to believe that they could take unemployed and defeated men, some of whom had almost seceded from society, and restore in them a sense of hope and full usefulness as American citizens. It was a matter of focusing a variety of rich team experiences on a variety of hard-core problems.

In September, 1962, the college received a $125,000 project grant from the Cooperative Research Division of the U. S. Office of Education and in October, a grant of $135,000 from the Office of Manpower, Automation, and Training of the Department of Labor. Demonstration-Research Project D-054 began actual training on November 15, 1962.

The Need for the Norfolk Project

When the unskilled adult worker is forced out of the labor market, he needs to learn a salable skill at the earliest date possible. This is equally true for high school dropouts and graduates who enter the labor market for the first time without salable skills. Good attitudes of workers toward their work, toward themselves, and toward others constitute another need workers must meet if they are to hold and move ahead on their jobs.

Functionally, the need was to plan and develop adult programs that provide the skills and attitudes required to enable unskilled workers to enter and move ahead in the labor market up to their capacity.

A nation-wide need for this project was to demonstrate the application of certain adult education principles that could be used to implement in the Manpower Training Program under the Act of 1962. For example, one urgent need was to demonstrate criteria for selecting trainees for trades since the then prevalent criteria excluded 95 percent of the unemployed unskilled workers needing training.

The need for this project was actually demonstrated in its early stages in the following ways:

1. The more than one-hundred representatives of cities, colleges, and of the federal government who came to the campus to see and study the program in action.
2. The nation-wide requests for materials on recruitment, selection, training, counseling and other phases of the project.
3. The Regional Conference held at the college supported by the U. S. Department of Labor midway in the training program, on the training of the disadvantaged. Participants in this conference were college, employment service, and government officials from all over the South. Secretary of Labor W. Willard Wirtz gave the principal address of the conference.
4. The demands for members of the Norfolk team to serve as consultants to colleges, and cities interested in conducting similar programs for the disadvantaged.
5. The nation-wide coverage of the project by the press and other communication media.
6. The supplementary research study supported by a MDTA Title I research grant to the college for a study entitled "Factors in Workers' Decisions To Forego Retraining."
7. The testimony given by the Project Team supporting amendments to the Manpower Training Act at the request of the Congressional SubCommittee on Education and Labor.

Program To Be Demonstrated

This program was designed to demonstrate how vocational education, general education, and counseling can be effective in increasing the capabilities of unemployed, unskilled adult workers for getting into a different occupation and for holding their jobs in the new occupational classification. In essence, this involved retraining adult workers. These workers were a large proportion of the labor force which was chronically unemployed(or underemployed).

The major problem of this project was to demonstrate and evaluate certain principles of teaching and learning which have evolved from research in adult education, in the recruitment and training of unskilled, unemployed workers. These principles were:

1. Unskilled, unemployed adults can learn a new set of occupational skills in an intensive 12-month program which is designed to take into account the personal attributes typical of persons in their life situations.
2. Unskilled adults can learn enough skills and internalize values essential for qualifying for certain trades when training in General Education(language arts, number skills, occupational information, and human relations) and a guidance supplement are given along with vocational training in the 12-month period.
3. Correlatives of the preceding are:
   a. When the combination of General Education, Vocational Training, and Guidance is given, there is an improvement in aptitudes and abilities as measured by standardized tests.
   b. Good employment adjustment(as indexed by getting and holding a job after training, etc.) will be a subsequent correlate of successful completion of the General Education-Vocational Program.

4. That certain standardized tests of aptitudes and intelligence as well as certain inventories of interests have:
    a. predictive value in the selection of trainees who are unskilled, unemployed adults.
    b. utility in the development of the materials and the training program appropriate for this group.
5. That General Education supplemented with counseling are essential correlates of vocational training if adult unskilled workers are to make good adjustments in their new occupations.

Design of the Project

The project was designed (1) to study, develop, and use materials and techniques for training hard-core unemployed, unskilled workers, and (2) to demonstrate the effectiveness of vocational-technical education, general education, and counseling in training these workers for selected occupations.

For purposes of the project, the "hard-core unemployed" were defined as those workers characterized by an employment history of low-paying and/or seasonal jobs interrupted by long periods of unemployment. In almost every instance, the hard-core workers had been employed at work classified by the Dictionary of Occupational Titles as unskilled or semiskilled work; he had no salable skills and no means of getting any.

The project specifically concerned itself with workers who, individually, fit into all three of the following categories:

1. Heads of families or households
2. Unemployed workers, as certified by the U. S. Employment Service, who had had at least a three-year attachment to the labor force

3. Unskilled workers, defined as those whose occupations during their last two years of employment were designated by the Dictionary of Occupational Titles as unskilled.

There were certain correlates of these characteristics which the investigators took into account in evaluating the data. For example, levels of literacy were likely to be low for this group and the years of formal schooling few. (The hard-core unemployed worker often reads at lower than the eight-grade level and perform number skills at lower than the sixth-grade level.) Out of the population just described, 200 persons were selected to serve as subjects and were divided into 4 groups of 50 each.

In order to evaluate the techniques used in the project, the staff imposed an experimental design on the retraining and educational activities, in addition to using sound statistical and mensurative methods. The design required four groups, as follows:

Group A--Main Experimental Group
Group B--Subsidiary Experimental Group
Group C--Main Control Group
Group D--Subsidiary Control Group

Group A received intensive general education and technical training. Group B received technical training but no general education. Group C received neither general nor technical education. Group D received counseling if they solicited it. Groups A, B, and C received group guidance on a systematic basis. In addition, individuals in those groups received personal counseling as the need arose.

Groups C and D were given a small honorarium under the grant from the U. S. Office of Education for the purpose of assuring their continuing contact and cooperation in supplying progress records through testing and interviews. Members of Group C were given $25($5 at the beginning of the project, $10 at the middle, and $10 at the end). Persons in Group D were given $60 in honorariums($5 per month during the training period). These persons were to be given an additional $10 when their contact for the follow-up study was completed. Members of Groups A and B received a weekly allowance of $25.

Each of the two experimental Groups, A and B, were divided into five groups of trainees according to the particular occupations for which they would be trained. Thus, there were 10 trainees in Group A who were taking the same technical training as 10 trainees in Group B. The trainees in Group A for a given occupation were matched with the trainees in Group B taking the same occupational training, so that the two groups were comparable for such traits as age, educational background, previous vocational training, general intelligence, and general aptitude. When tests of significance were applied to age, education, and general aptitudes, no occupational training group within Group A differed significantly from its counterpart in Group B.

Characteristics of the Groups

Ages of Enrollees. The average age of the two-hundred men in the project was 30 years. Average ages by groups were GroupA-31 years; Group B-29 years; Group C-31 years; and Group D-30 years.

Educational Attainment of Enrollees. The highest average grade completed as reported by the two-hundred men was 9.9 grades. However, it is entirely possible that this was much lower as adults are quite prone to report a much higher grade to officials than has actually been completed. Also, scores on reading and arithmetic tests indicate a much lower level of competence. Highest average grades reported by Groups were Group A-10.6; Group B-10.3; Group C-8.7; and Group D, grade 10.

The median score on the Revised Army Beta Test for all four groups was 93.25; Group A-99.33; Group B-95.00; Group C-91.68; and Group D-90.37.

As noted above, scores of the experimental groups on the Gates Reading Test used to group the trainees for instruction indicate that the reported highest grade finished is not an index of their reading abilities. Most read at a rate of competency far beneath this level. Group A scored at the grade 8.0 level as compared to a reported grade completion of 10.6. Group B scored 7.6 and reported a grade completion of 10.3. Scores for A and B groups on the S.R.A. Arithmetic test ranked at the 35th and 24th percentile rank, respectively. This is comparable to approximately the 7-8th grade.

Size of Families. In addition to wives, the enrollees had average numbers of dependents as follow: Group A-2.5; Group B-1.9; Group C-2.0; and Group D-1.9 -- and for all groups combined, 1.9.

All of the men in the four groups were listed by the Virginia Employment offices as chronically unemployed--and decreasingly employable without further training.

In summary, the average subject of this study was a male 30 years of age, who completed 9.9 years of schooling, who had 1.9 dependents in addition to his wife, who has been intermittently unemployed, and whose personality has been unfavorably affected by the frustrations that come with low pay and job insecurity. Further data are included in tables in the appendix.

Special Problems Met

The threat to attrition was a special problem that had to be met in order that ninety of the one-hundred men enrolled would complete the one-year trainig courses. Three major causes of the threat were (1) transportation problems, (2) inadequate weekly training allowance, and (3) penalty for supplementing training allowances with part-time work.

Other special problems that required continuous positive action to forestall a higher dropout rate were:

1. How to induce the many creditors to reduce and delay payments past due by trainees who were potentially good customers after training.
2. How to provide cash loans up to $5 to trainees to tide them over until checks came at the end of the week by organizing and conducting a Trainee Credit Association.
3. How to supplement training allowances by soliciting donations of food, clothing and toys at Christmas.
4. How to counsel trainees on wiser spending of the limited training allowance by planning low-cost meals, quantity purchasing and the like.
5. How to cope with cases of eviction and other housing problems by securing cooperation of housing agency officials.
6. How to solve trainees' minor court problems by consulting with judges and other officials of the courts.
7. How to restore self-esteem and upgrading of personal appearance and conduct, by organizing Trainee Council, personal counseling by instructors and administrative team.

The administrative team regarded the identification and solution of these special problems as valuable research findings.

Presentation

In order to maintain continuity of thought and give a clear view of the factors and problems involved in the training of hard-core unemployed workers, the study is outlined in four chapters. The introductory chapter contains the background, need for the study, program to be demonstrated, the design of the study, characteristics of the groups on which the study was made, and special problems. Chapter II contains the procedure of the study It tells how respondents were recruited and selected; how the general education and vocational trade sections of the study were organized and operated; gives the procedure for the placement and follow-up phase of the project and lists the five general sources of data for the study. It may be noted in the design of the study that this research was imposed on a special Manpower Development Training Program and that this program involved the training of hard-core unemployed workers. Many unstructured procedures were, therefore, adopted which may not appear in this report in as much as they were not a part of the research design. Chapter III contains the analysis of data. It deals with the follow-up and work experiences of the trainees, effects of trade and technical training, effects of the general education, and probable effects of counseling. Chapter IV constitutes the summary, conclusions and recommendations for similar programs and Manpower Development Training programs in general with the view of better serving those it intends to serve.

CHAPTER II

DEMONSTRATION RESEARCH PROGRAM (PROCEDURE)

RECRUITMENT AND SELECTION OF TRAINEES

The existing criteria for establishing eligibility of trainees in MDTA programs were designed to give priority to those in our society who need training immediately. If this design is to be brought to fruition, experiences in the Norfolk State Project indicated that the normal recruitment processes needed to be restructured. The recruitment process is so vitally important to a successful program that weak and arbitrary methods could easily lead to abortive failure.

The recruitment process entails attracting the applicant, testing and counseling the applicant and selecting trainees. The chronically unemployed adult is not likely to apply for training simply because he is told that he should. Attracting him will involve finding him and then perhaps convincing him of the merits of training. Many of the so-called "hard core" unemployed are functional illiterates who have not learned how to follow written directions. If these are to be selected on the basis of the General Aptitude Battery, most will be eliminated. Selection will then be made among the upper limits of the unemployed--the so-called cream off the top.

DEMONSTRATION RESEARCH PROGRAM(PROCEDURE)

Recruitment for the Norfolk State Project began about three months prior to the first day of training. At first, without any public announcements, the State Employment Service used its files to invite applicants to report for interviewing and testing. This list was exhausted and not nearly enough applicants had reported. Later,

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Recruitment for the Norfolk State Project began about three months prior to the first day of training. At first, without any public announcements, the State Employment Service used its files to invite applicants to report for interviewing and testing. This list was exhausted and not nearly enough applicants had reported. Later, the project was given excellent coverage in the newspapers, on radio, and on television. For a period of approximately six weeks some phase of the project was periodically featured in the national and local press. This excellent coverage had the effect of creating a very favorable atmosphere among the literate public, but with all the excellent news coverage, not nearly enough applicants applied for training. At this point, it became clear that either the unemployed people had no desire to learn new skills or that they had not been reached. Assuming first that they had not been reached, the team met and decided to adopt procedures which would eliminate that possibility.

A group of ministers was called to a special meeting at which time the Provost of the College explained the entire project in detail and frankly reported the status of our recruitment at the time. They were asked to give their support to a plan for the circulation of information with the aid of church congregations in the city. All of these ministers had, in the past years, taken an interest in adult education and the efforts of the College to carry adult education projects into the community. They agreed to give their congregations information about the project and further, to urge them to send anyone whom they thought could qualify, to the College for more information.

A very simple "fact sheet" containing information about the project with a question and answer format was put in the hands of hundreds of people. These fact sheets were distributed by Norfolk Division of Virginia State College students, barber shop operators, employment service counselors, workers in the city recreation centers, housing project personnel, store owners, and others. Research associates and teachers visited selected churches and were given permission to give brief talks on the significance of retraining.

Experiences with recruitment in this project have revealed that the majority of trainees learned about this project through verbal communication. It was discovered that friends, relatives, ministers, and etc. were their chief sources of initial information. This fact indicates that in order to attract unskilled, unemployed adults into retraining programs, you must first know how to communicate with them, and secondly, you must know where to reach them. Ordinary media like newspapers were not sufficient because chronically unemployed workers don't seem to read newspapers very often or very carefully.

Potential trainees are generally expected to be interviewed, counseled, and tested by the State Employment Service to determine their interest, suitability, and aptitude for occupational training. Persons selected are then sent to a specific training course for training. Although the employment service has many experienced counselors who are very well qualified to conduct the initial interviews with MDTA applicants, it was found necessary to indoctrinate them with the approach adopted for this project. In order to be sure of this, an associate project director held conferences with the manager and counselors of each employment office involved in the recruitment effort. At this time, the complete project was explained, all the while allowing questions as they arose in the interest of complete understanding. It was established that participation in the project was to be offered as a cooperative venture in which the U. S. Government, the College, and the applicant would all contribute. The Government and the College would provide money and facilities, and the trainee, his time and effort to learn. The low cost of living allowance was not to be regarded as pay but as assistance while the trainee was undergoing training.

After the initial interviews, applicants were screened to satisfy the criteria as stated in the law before they were given the GATB Test Battery. An associate director met with each group of applicants prior to the administration of the tests. At this orientation session, a brief statement was made which explained the purpose and operation of the project and why they would be given the battery of tests, and how the trainees were to be selected. There were always many questions and, inevitably, there were some in each group who voiced their mistrust. These question and answer sessions at this stage provided an opportunity to clear up misunderstandings and also to see the project on a basis which would make the trainee a partner in this venture. "How can the government expect a family to live off the small allowance?" was always asked. The best answer to this question was to explain the training allowance as incentive money. These sessions provided an opportunity to allay tensions and anxieties built up over the prospect of taking tests. An explanation of the purpose of aptitude tests and the knowledge that these tests were not the only criterion upon which selection was based seemed to relax the applicants somewhat.

It became apparent that at certain points in the process of testing and selecting of trainees there needed to be some assurance given to the applicants that this government proposed program was just what it claimed to be. We learned that many chronically unemployed persons were skeptical of this training program even from the time they were first contacted by the employment service. The indoctrination conference with these applicants when they first reported was one means of establishing confidence in the program. These men often mistrust test results as a condition for selection. They often look upon tests as a device for depriving them of an opportunity. Some of these men have had experiences in which they believed tests and other devious means were used to eliminate them from job opportunities. Oftentimes they found it difficult to believe that this was a genuine opportunity for them, and their mistrust was sometimes unfortunately transmitted to others in their group.

All applicants were required to take the aptitude test battery and were subsequently referred to the College for further interviewing and selection. Judgments for selection were made the responsibility of the project team. A very simple flexible formula was used. Part of the trainees made acceptable patterns on the GATB Test Battery to warrant selection in the trades of their choice. Others were selected whose aptitude scores were just a little too low in some areas but whose background of experiences led the committee to believe that useful residual skills were present. The third group scored low on the verbal section of the test, but high in such areas as manual dexterity, motor coordination, form perception, and spatial aptitude. This, along with interest based on some knowledge of the area or trade and an evaluation of employment experiences, provided a basis for selection. Normally, at least two-thirds of the trainees in this project would not have been selected in a regular MDTA program.

It is the belief of the writers that it is extremely difficult to predict who will be successfully employed at the end of a training cycle. This belief is held because job capability is only one of the determinants employers used in the selection of employees. In addition to job capabilities, employers rate character, sex, race, religion, personality, particular experiences and education as outstanding determinants in the desirability of an employee. There is, naturally, some variation in these preferences depending on the job and the condition of the labor market at a given time and place.

For purposes of this study, more pragmatic criteria for success were selected. Success was based on successfully passing the course. The degree of success was indicated by the letter grades "A", "B", "C", "D" and "F", given by the teacher. The marking system was as follows: A, exceptional; B, superior; C, average; D and F, unsatisfactory.

Selection of trainees for the project was based on these factors

(1) One-fourth of the trainees scored successfully on the general aptitude test battery given by the employment service.

(2) Three-fourths did not make required scores on GATB and therefore other factors were used to supplement the tests, The other factors which were determined subjectively by team interview, were interest, the non-verbal part of required aptitudes on GATB, work experience, physical fitness and desire for opportunity to learn a trade. The team judgment was in effect a statement of faith that the selectees could profit by the instruction.

The team held the belief that most of the applicants could not score sufficiently high in the various aptitudes on the GATB to be selected for the project. The team also held the belief that many of those who would be rejected could profit by the training which would be given in the project.

Of the 90 trainees who completed the training, 22 successfully passed GATB and 69 did not. Although the general aptitude test battery was not used alone as a selection device, it was used as a bench mark to gauge the relative position of each trainee. Considerable weight was given to such aptitudes as finger dexterity, spatial aptitude, form perception, motor coordination and manual dexterity if such aptitudes were considered important attributes for one engaged in a particular trade. Each trainee was interviewed by the project selection committee, which was composed of the project team, after which a tentative determination was made. Final selection of 100 trainees was made after all applicants, who applied during the selection period, were tested and interviewed. Purposefully, approximately three-fourths of the trainees were selected on the basis of their not doing well on the GATB. The underlying belief was that hard-core unemployed men generally would not do well on written tests but that other factors along with tests would give the selection committee better insights into the possibilities for success for many.

Records for men completing the training are shown in table I. Fourteen men or 66 percent of the men who passed GATB made scores of "B" while 36 men or 52 percent of those who failed GATB made equal scores of "B". One-third of the men who passed GATB made "C" averages while 46 percent of those who failed GATB made "C" averages. It appears that many who failed the general aptitude test battery did well in trade classes. It also appears that in the interest of human conservation the risk of relying on other factors to supplement the GATB as selection criteria is well worth taking.

Table I

FINAL GRADE DISTRIBUTION OF TRAINEES WHO PASSED
AND THOSE WHO FAILED THE GENERAL APTITUDE TEST BATTERY

	PASSED GATB						FAILED GATB					
Group	A	B	C	D	F	Total	A	B	C	D	F	Total
A	0	8	6	0	0	14	0	15	13	0	0	28
B	0	6	1	0	0	7	1	21	19	0	0	41
Total	0	14	7	0	0	21	1	36	32	0	0	69

* The Marking System: A-exceptional; B-superior; C-average; D and F-unsatisfactory.

GENERAL EDUCATION

A major aspect of the experimental design was the testing of the hypothesis that undereducated workers would benefit greatly from related work in general education as they gained technical competence and entered the semiskilled or skilled work forces. The investigators reasoned that general education competencies would assist the undereducated person to gain greater insights in his technical studies, secure a job and become adjusted to it, maintain good relationships with supervisors and fellow workers and adjust to the necessity to change jobs again if this became necessary because of automation or other factors. They believed that the men could also benefit from broadened concepts of budgeting and of the management of financial affairs.

Planning the Curriculum

A team of five professors from the college's general education faculty was assembled to work on this phase of the project. All worked on a part-time basis. The team consisted of specialists in reading, language arts and mathematics. A sixth specialist in guidance was secured on a loan basis from another institution. The director of general education for the college led the planning.

The general education team received assistance in the planning of the curriculum from the Adult Education Branch of the U. S. Office of Education. Specialists in language arts and mathematics from this agency came to the college as consultants in the planning sessions.

The team selected four major courses to constitute the curriculum. These were reading, language arts, number skills and occupational information and human relations. A rationale and description for each course follows:

A. Reading--Adequate reading skills are necessary for success in technical occupations. Workers must read the increasingly complicated manuals of directions for technical work as well as work orders, bills of laden, contractual agreements and union materials. The better worker-citizen is also the one who is the better read in general areas. This course stressed leisure time reading as well as reading for technical and business competence. The main objectives were to raise reading levels, correct poor reading procedures and instill in the men the reading habit. A specialist from the college reading clinic taught the course.

B. Language Arts--The successful worker in technical occupations must speak, listen and write with an increasingly higher degree of skill. Verbal instructions must be given and taken, materials must be requisitioned, and receipts must be issued. On-the-job training, too, is often continuous as technology grows and becomes more complex. This instruction is often intensive and concise. Notebooks and manuals must be kept and the instruction must be understood. This course stressed this sort of language arts. The main objectives were the development of skills in listening, writing and verbal expressions. It was taught by the chairman of the English department who is also a specialist in communication skills.

C. Number Skills--The modern industrial complex requires basic mathematical skills of the successful technical worker. Decimals, percents, fractions, and ratio and proportion are used by workers in the simplest trades. Square roots, logarithms and some principles of calculus are required in the more complex occupations.

Two members of the department of mathematics plus a mathematics teacher from the department of industrial education offered three courses of varying degrees of complexity for this area. Men who were preparing for work in maintenance and brickmasonry were enrolled in a lower level course. Sheet metal and automobile mechanic trainees took the middle level course and electronic trainees took the higher level course. The main objectives were the development of competencies of the men according to their needs and the development of a foundation for further learning in this area.

D. Occupational Information and Human Relations--The successful worker in a rapidly shifting economy is one who has a command of the dynamics of the world of work. This worker will know where the jobs are at a given time and where they are likely to be in the future. He will know how to get a job, how to change jobs, and how to grow in-service on the job. Unions, fringe benefits, taxes, and money management will also be familiar areas for this worker.

Important, too, in the industrial society is the ability to understand one's self and others, the ability to adapt to change and to relate to people with a minimum of emotional conflict. Equally important is the ability to find fulfillment in employment where work tasks have become fragmented. A guidance specialist taught this course. Emphasis was placed on attitudes and the understanding of behavior as well as the practical aspects of knowing the world of work, earning money and managing it wisely.

Curriculum Activities and Directed Study

The general education team reasoned that the experiences in this area should extend past the classroom door. As we have thought in the past in terms of the whole child, so, the team reasoned, we must think in terms of the whole adult. The team was convinced that debilitating factors which affect learning must be mitigated as much as possible and that curriculum activities should be regarded as learning activities.

Accordingly, a one-hour period of reading and directed study was scheduled for each day for the men. It was felt that here they could do the serious reading and study which might not be possible in crowded, noisy homes. The men were scheduled for work in the college library and were urged to use it at their leisure. They were invited to attend college concerts, forums and athletic events. They ate in the college cafeteria, read the college newspaper and contributed news to it. Visiting professors from the college faculty lectured on the humanities. The college film series entitled, "The Humanities," was attended by the men. Other professors gave talks on budgeting, menu planning and borrowing money. Group A contributed many participants to the public relations efforts of the project. Their appearances on radio and television were duly critiqued by the group for the applications of sound principles of communication skills.

A fine teaching-learning vehicle, and a great source of group pride, was the project newspaper which was published by the language arts classes. Project D-054 as the paper was called, encouraged writing by the group and it was distributed throughout the college and, indeed, throughout a large portion of the city.

Grouping and Scheduling for Instruction

Grouping according to learning needs was considered important by the team. A degree of homogeneity was achieved in the classes for Group A (the general education group). The basic classes were comprised of two sections of 25 men each. One was a higher competency group and the other, a lower.

Groupings for language arts instruction were made on the basis of scores achieved by the men on the Gates Reading Survey, a diagnostic reading test published by Teachers College, Columbia University. The higher scoring trainees were scheduled for reading instruction two hours per week and for language arts instruction(vocabulary building, spelling, writing, verbal communications) three hours per week. The order was reversed for the trainees with lower scores.

Groupings for instruction in number skills and occupational information were made on the basis of the Science Research Associates Test of Basic Skills in Arithmetic for number skills and on the basis of the technical skill being studied for occupational information. This resulted in three groups for the number instruction and two groups for instruction in occupational information.

The following schedule shows the daily routine of the men enrolled in general education courses.

PROJECT D-054

RE-EDUCATION OF UNSKILLED AND UNEMPLOYED WORKERS

GENERAL EDUCATION SCHEDULE
FOR
EXPERIMENTAL GROUP A

TIME	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8:00 12:00	Shop	Shop	Shop	Shop	Shop
12:00	Lunch	Lunch	Lunch	Lunch	Lunch
1:00	Sec. I-L.A. 208 Goss	Sec. I-L.A. 206 Curl	Sec. I-L.A. 208 Goss	Sec. I-L.A. 206 Curl	Sec. I-L.A. 208 Goss
1:00	Sec.II-L.A. 206 Curl	Sec.II-L.A. 206 Goss	Sec.II-L.A. 206 Curl	Sec.II-L.A. 208 Goss	Sec.II-L.A. 208 Curl
2:00	Sec. I-N.S. 206 Carter & Team	Sec. I-O.I. 206 McEnge	Sec. I-N.S. 206 Carter & Team	Sec. I-O.I. 206 McEnge	Sec. I-N.S. 206 Carter & Team
2:00	Sec.II-O.I. 208 McEnge	Sec.II-N.S. 208 Carter & Team	Sec.II-O.I. 208 McEnge	Sec.II-N.S. 208 Carter & Team	Sec.II-O.I. 208 McEnge
3:00	Directed Study: Rooms 204, 206, 208. Personal conferences with Specialist in Occupational Information and Guidance, Room 106.				

Legend: O.I. - Occupational Information

L.A. - Language Arts

N.S. - Number Skills

Meshing of General and Technical Instruction

An important procedure in the instructional program was the attempt to relate as closely as possible the general education experiences in number skills, reading and language arts to the jobs for which the men were training. The team felt that this was vitally necessary for effective motivation and reinforcement in the teaching-learning process.

The occupational information and human relations course was naturally meshed. The teachers of basic skills and the technical faculty attempted to mesh instruction in these areas by exchanges of materials and joint planning of units. Course outlines and technical manuals of the trades were given to the general education faculty. From the planning conferences came lists of vocabulary and a general understanding of the pace of instruction. An example of a "meshed" number skills problem follows:

1. In estimating the number of common bricks for a job, Joe figured that 17,250 bricks would be required for the actual work. However, he added an additional 20 percent for bats, breakage and salmon brick. How many bricks must he order?

An example of a "meshed" language arts problem follows:

Directions: In the blank following each single word, write the letter of the definition that best explains the single word.

1. ohm____
2. tongue____
3. derrick____
4. fulfill____
5. lacquer____

a. produces rotation
b. to make a good contract
c. a paint finish or clear varnish
d. a unit of electrical resistance
e. a construction over a hole
f. the path of an electric current

Developing Instructional Materials

Also important in the general education program was the development of instructional materials. The team realized early in its planning that materials for this type of instruction would have to be assembled from many sources and that some would have to be created. Accordingly, time was set aside for this type of development in the computation of loads.

The variety of learning approaches in the program was manifested in the materials used. In reading, for example, the trainees used technical dictionaries, graded newspapers, auto-instructional pacing devices and materials from the fields of family planning, economics, politics, medicine, civil rights, etc. Language arts classes used programmed learning materials and project-oriented learning experiences. Number skills instructors used a variety of three dimensional models, blackboard rulers and slide rules while the occupational information and human relations classes used a series of films, some cartoons and a great deal of human interest materials. The dynamics of instruction in each area are described in the sections following.

Teaching Reading

Although there were marked differences in the achievement levels between the two groups of men and among the men in each group, there were still some fundamental shortcomings that were common to all of the trainees. Thus, the faculty began its work by trying to establish a philosophy of reading that would permit each individual to realize that by virtue of his adult experiences, by virtue of his being a man and having lived somewhere, somehow to his present chronological age, he was advantaged from the standpoint of being able to make rapid progress in reading. Reading, it was emphasized, depends not only on word recognition and meaning--important as they are, but also on the amount of information the individual brings to the printed page. Each man was assured some degree of success. Each man was taught through classroom experiences and private conferences to respect himself and his classmate. The simplest question was encouraged and answered.

The reading classes had few problems in motivation; the men seemed eager to learn. In the early days of class work, two men wanted their classmates to believe that they knew much more than the other trainees; however, they soon found the farce unnecessary when little emphasis upon individual results or on the rate at which class work was performed. Learning consonant sound, consonant blends and varied vowel sound were interesting experiences to almost all of the trainees. Using technical terms with which they were familiar and in which they were interested served to motivate their learning to attack or unlock sounds in new words. The study of common word elements and affixes led to some difficulty for the less advanced group. This difficulty arose especially when affixes changed the part of speech of the original word as the trainee knew it.

Comprehension was trammeled by the trainees' low value system--_what they brought of their deprived experiences to the printed page_. Correct answers were few to questions such as these: "Under what conditions can police be denied admission to your home: or, "Why was John made foreman of the crew instead of Jim?" Discussions were vehement as the trainees insisted that despite the author's words, police always kick down doors and enter at will or that men always get promotions because of favoritism. Wider readings that focused attention on men and their experiences that led to successful living have helped the trainees evaluate their ideas about life and better understand the nature of man.

Rate was introduced to develop the trainees' confidence in their ability to read faster. Although the principle is accepted that enlarged vocabulary and improved comprehension will lead to comprehension rate, the faculty worked to break patterns of regression and word-for-word reading. The Controlled Reader was used more to show men their own ability to read in phrases and without regression than to increase rate *per se*.

Instructional Materials--Reading

One of the larger challenges of this project was the development of instructional materials for the men in reading classes. The material had to be developed to insure high *motivation* on the part of the men and at the same time the materials had to be graded in order to insure a *steady growth* in their reading abilities. While the same needs governed the development of materials in language arts and number skills, the challenge in reading was perhaps the most severe as abilities here undergird growth in the other areas.

The problem of motivation and gradation in materials development was approached through a heavy use of the language of the technical fields in which the men were studying. While technical materials did not form all of the basis for development, it did form at least half of every unit of instruction.

The procedure for development of a unit consisted of:

1. clarifying the skill to be developed.
2. noting both the average level of the group and its extremes.
3. preparing a graded word list from lists received from technical instructors.
4. studying the technical dictionary to clarify these word meanings.
5. studying technical manuals to determine a context for these words, consulting often with technical instructors.

6. preparing reading exercises which use these words for accuracy in context.
7. preparing materials for reading improvement devices which use these words in context. (The Controlled Reader, etc.)
8. selecting commercial materials to integrate with teacher-made exercises.
9. preparing review and evaluation instruments using these words in context.

An example of this process could be the unit: Word Attack Skills V (the fifth in a series on this important skill). The course outlines specifies the offering of skills for the development of abilities to recognize consonants and consonant blends, pronounce through syllabications and to use the dictionary in determining both pronunciation and word meaning.

Accordingly, Word Attack Skills V began with a restatement of its specific objectives:

1. To help students identify basic sound units in language.
2. To help students apply the principles of syllabication.
3. To help students learn to use the dictionary to derive pronunciations and meanings.
4. To help students improve rate.

Some examples from the word list for the unit together with the technical area represented are:

1. thermostat--automobile mechanics
2. conduct--electronics
3. disinfectant--maintenance
4. aluminum--sheet metal
5. derrick--masonry

An example from the learning exercises: Review Sheet 2: "Hints on Syllabication" follows:

1. Copy each word from the board. Spell each word to yourself as you copy it.

2. Re-write words from List V in a second column. Place a line between syllables as you write.

   Example: in/stru/ment

3. In a third column write the syllables that contain sounds controlled by r.

4. Pronounce words with instructor to check syllables and sounds.

5. Look up the meaning of the words in the dictionary. Write meanings in your dictionary according to form below:

Word	General Classification	Specific Features
combustion	an act or process	of burning rapidly

6. Discuss word meanings in class.

7. Drill with Word Review List V.

   Example:

   A. Write in each blank in the sentences below a word from Word List V that makes the statement true and meaningful.

      1. The house is getting colder, please set the ___________ up so that the house will remain warm.

Word Attack Skills V then digressed from analysis of technical terms to drills on the Controlled Reader designed to improve reading rates. Materials for this device are both technical and general in nature.

An example of Controlled Reader material follows:

From: Controlled Reading Stories - Grade and Junior High,
Educational Development Laboratories, Huntington,
New York.

"Cold Light" by N. W. Goldsmith

Vocabulary: fluorescent, filament, contradictory,
apparatus, incadescent, friction.

Do you know what "cold light" is? John Scott didn't and when he saw "cold light" mentioned in a magazine he was reading he stopped short. The article was on fluorescent lighting but it didn't explain cold light to John's satisfaction. The next day ________________________________.

Mimeographed materials from magazines dealing with daily life were also used to drill for rate improvement. An example of an excerpt from an article by Dr. John Schindler which appeared in the Successful Living Series published by the Readers Digest.

"YOUR MIND CAN KEEP YOU WELL"

"As a Doctor I know that there are a thousand different ailments that this human clay is heir to, and one of them is as common as the other 999 put together. Fifty percent of all the people going to doctors in the United States today are victims of this one disease. Many would put the figure higher. At one well-known clinic in the South a report was published reviewing five-hundred consecutive admissions to that institution; of those, 386--or 77 percent--were sick with this one disease. Persons of any age, in any walk of life, can contract it. Furthermore, it is a terrifically expensive disease to diagnose and treat."

This sort of material seemed to hold the interest of the men almost as well as technical material. Articles on religion, employment, civil rights, child-rearing practices and local politics were also effective. The procedure in rate improvement consisted of allowing a certain period of time for silent reading, another period for writing the meaning of the piece, and still another for group discussion.

Another valuable phase of reading instruction was the effort to stimulate general reading. A period of directed study was scheduled each day for homework in both general reading. Magazines and newspapers were placed in the classrooms. News for You, a graded newspaper for adults published by the Laubach Co. of Syracuse, N. Y., was received in quantity and distributed to the men according to ability levels. The primary and intermediate levels were used. The men were encouraged to use the newspaper, reference and general reading rooms of the College library. Library loan privileges were extended. They were also urged to secure library cards from the city library and to use it and its branches.

Instructional Problems--Reading

A great deal of work and study must still be done in perfecting methods for improving reading for severely deprived adults. The approach used in this project seems to hold great promise as the men with the lowest reading levels made the greatest reading gains. Instructional materials need to be mass produced, however, which would eliminate the time, effort and cost of development which were involved in this project. On the other hand, word lists, rate passages, review instruments, syllabication and vowel sheets which are developed for one or two technical areas alone is perhaps parsing the material too greatly for a commercial success. Broad combinations of say Reading Improvement for the Building Trades might be both an instructional and commercial success.

Teaching Language Arts

Teaching language arts to a group of adults--many of whom have been out of touch with school for several years, have done little or no writing and very limited amounts of reading, or have through the years placed very little value on learning the skills and arts of communication--is a challenging undertaking. Such an endeavor means synthesizing, deleting, or crossing many of the traditional approaches to the subject matter. It means creating a course outline which serves both as practical application to the trades with which the students are concerned and as a medium through which language skills may be learned. It means making a constant effort to modify attitudes regarding language learning, and, in some cases, it also means continuous motivation. Therefore, instructional procedures must vary; materials must meet different levels of interest and competency; activities must be related directly to the trades for which trainees are preparing themselves; and plans must be varied and flexible. For information on language usage and semantic frequency counts, such studies were consulted as Facts About Current Usage by Albert Markwardt and Fred Walcott, Teacher's Word Book of 30,000 Words by Thorndike and Irving Lorge and A List of Spelling Difficulties in 3876 Words by Arthur I. Gates. Conferences on context and method were held with persons experienced in adult teaching and with personnel actively engaged in the trades to be taught. Curriculum guides in adult education, such as English for Vocational Schools by the New York State Education Department, and textbooks and other printed material related to the given trades were examined. A tentative outline and skeletal teaching units were then developed with the aim not only to train the students in language skills required for successful execution of their job but also to enrich their language experiences generally. The unit approach described in Instruction in Reading was also used in Teaching Language Arts.

Proceeding from diagnostic testing and temporary grouping, the instructor took further inventory of language skills through samples of informal writing and observation of speech patterns. Teaching units, developed from the preplanned outlines, were modified, rearranged, amplified or deleted according to demonstrated needs and interests.

Approaches to the subject matter were of necessity varied. That is to say, some of the traditional methods of teaching, spiced with newer techniques, were variously employed. It seems that informal discussion and exercises which required solving problems and which insured some degree of immediate success elicited greater enthusiasm from trainees than did most of the reading and writing assignments. Nevertheless, as skills and practices increased, feelings of insecurity in meeting reading and writing requirements gradually diminished.

Among the specific teaching devices used for each unit were programmed lessons, class paper, speech pattern practices, word association games, and cultural enrichment films. The programmed lessons were written by the instructor to treat specific problems in vocabulary, usage, etc. and so arranged that the student could check the accuracy of his responses immediately after he made them. In the use of such a technique, possibly some of the disadvantages--namely, the students' temptation to "cheat," the writer's mistakes in framing error-free levels of learning concepts in a lesson that has not been properly tested as programmed instruction, and the group pressure which impels a student to rush beyond his understanding to finish a lesson--may be offset by some of the values derived: the student is able to proceed at his own rate; the teacher is free to assist those who have difficulty; and learning is rewarded and reinforced by the system used. Excerpts from a programmed lesson follow:

Subject and Verb Agreement

DIRECTIONS: Read very carefully the following frames and answer the questions given. Use your card to cover all items except the one with which you are working.

	1. You will remember that a subject is usually the word in the sentence which answers Who? or What? when either Who? or What? is placed in front of the verb. For review, what are the subjects and verbs in the following sentences: We were hungry; therefore, we ate all our lunch early. Subject(s)_______Verb(s)____
1. we were, we are	2. Lenny has seen his father only once since he finished school. Subject(s)_______Verb(s)____

The class paper, which the students entitled Project D-054 Progress was another method of instruction which served as an avenue *of expression* and service for those who had penchants for writing poetry, homespun philosophy, and reports; those with artistic ability; and those having other skills such as typing, organizing, "dummying," etc. Primarily, the paper served as an instrument for the use of communication skills, but it also served as a laboratory for developing responsible leadership, conducting business and learning social interchange. Excerpts from the paper were used often as lessons.

Word association games proved to be an effective approach to teaching vocabulary and spelling. Speech pattern practices--that is, exercises which required the student to use given patterns of language usage in repeated oral drill--clarified some misunderstandings, provided a painless medium for discovering gross problems in oral language usage, and served as a device for helping the students remember preferred speech patterns. The Encyclopedia Britannica film series: "The Humanities" and demonstration-lecturers and discussions on the interpretation and enjoyment of the creative arts evoked questions and promoted some understandings of the relationships between the arts and life.

With reference to teaching procedures, it has become evident that (1) a close coordination between shop and language arts instruction is likely to insure integration of these students through practical application of language skills to the given trade; and (2) teaching language arts must not only incorporate the skills of language necessary in effectively conducting business, personal, and social affairs, but it must also provide trainees with information and tools for becoming better informed and responsible citizens.

Instructional Materials--Language Arts

Instructional materials, except extended readings and films, were almost entirely teacher-made. Some of the lists of technical words used in vocabulary and spelling lessons were prepared by shop instructors; others were collected, in context, from the textbooks used in trades classes. General words were taken, for the most part, from "Gates" spelling list and from Thorndike and Lorge's semantic word count(supra). Lessons on problems of usage, spelling and vocabulary, as well as simulated job orders, application forms, equipment orders, inventories, etc. were written and duplicated. The writing assignments often dealt with topics and problems submitted by shop instructors; reading assignments covered newspaper and magazine articles, short stories selected from Short Story Masterpieces edited by Robert Warren and Albert Erskine(New York: Dell, 1962) and selected library holdings. A unit containing examples of spelling lists, expository writing forms, the project newspaper and a programmed lesson was very helpful.

Instructional Problems--Language Arts

Possibly the major instructional problem in Language Arts was that of meeting differences in background, interests, motivation and aptitudes. Students performance in language arts ranged from non-reading to college levels. The difficulties inherent in presenting materials on varying levels in five different trades became complicated by the absence of available materials which meet the problems in language as well as capture and maintain the interest of adult learners. Moreover, textbooks in English were found to be inadequate: in those which treat English, fundamentals usually appeal to adolescent experiences and interests and those which are written for the adult audience either fail to treat the facts of language accurately or fail to drive directly to the core of problems in language usage the craftsman faces.

Some of these problems, nevertheless, were met by conducting an informal classroom using group dynamics: men often worked in small groups organized for various purposes, and those who needed it received individual instruction. And teaching materials were created or tailored to fit the needs. Publishers might well give attention to this problem of material development.

Self-discipline, a problem which the trainee himself must master, ultimately becomes a problem in instruction as well. Routine and often rigorous reading and study habits had to be polished after years of disuse or abuse. Sporadic or sloven work habits had to be replaced by system and accuracy. Delayed gratification had to suffice as a goal substitute for immediate, short-term pleasures. Men had to re-learn habits of keeping school and work supplies available and functioning; they had to learn how to concentrate, to listen for various purposes, and how to follow directions. All told, the degree to which trainees were able to discipline themselves to the rigor of a classroom and manage the inevitable personal problems they constantly faced was also a measure of the quality of their performance.

Instruments requiring self-evaluation have proved useful in Language Arts evaluation for, while he may not make an accurate self-appraisal, the trainee would be required to examine his needs and evaluate his progress. Teacher evaluation was also desirable. Trainees wanted their teacher's approval and they were eager to succeed; they wanted grades as a means by which they could determine what progress was made. The grading system of "H" ("Honors"), "PR" ("Progress"), "P" ("Passing"), and "U" ("Unsatisfactory"), used in Language Arts classes seems to have been a fair and satisfactory reporting system.

Teaching Number Skills

Teaching Number Skills to unemployed, unskilled adults involves the basic principles of adult education. Their motivation, when such instruction is coupled with training for a salable skill, is apt to be higher. On the other hand, personal problems of the men from this economic strata are infinitely more confounded and therefore are a serious deterrent to optimal learning.

Unskilled, unemployed adults must be tested to ascertain levels of competence and instructional needs as in regular classroom teaching. They must then be grouped according to manifest ability, motivated, engaged in experiential activities designed to promote learning and they must participate in the evaluation of the teaching learning process.

A complete range of abilities from the highest to the lowest was included in the experimental general education group of this project. For the regular training program, however, only those individuals manifesting a need for improvement in number skills would need to be scheduled for this instruction. A high school graduate, for example, who scored high on the mathematics sections of project tests and who was enrolled for an office machine operator's course would not necessarily need number skills instruction. If he were studying drafting or electronics, however, he would benefit a great deal from mathematics pitched at this level.

The test used in the project for grouping was the Science Research Associates Test of Basic Skills in Arithmetic. A study of the scores of the test revealed that an hierarchy of abilities was present in the group, beginning with electronics trainees and proceeding downward to maintenance trainees. To be able to relate instruction to the trade as much as possible the two trades most nearly alike in ability were grouped for instruction and electronics was taught in a separate group. This resulted in three basic number skills groups with masonry and maintenance trainees constituting one group, sheet metal and auto mechanics another and the electronics group.

Instructional Procedures

The faculty set forth three basic objectives for number skill instruction. They were as follows:

1. To develop student attitudes which will foster:
    a. interest in developing higher skills.
    b. desire to analyze complex situations by the component method.
    c. self-reliance in attacking problems.
    d. dissatisfaction with vague results.
    e. insights into new uses of mathematics.
    f. appreciations of the significance of symbolism and quantitative relativity.

2. To increase and extend the ability to:
    - a. analyze relations of quantity and space to deduce logical conclusions from this analysis.
    - b. understand symbolic notation.
    - c. read, interpret and organize statistical and graphical data.
    - d. visualize accurately from drawings and specifications.
3. To strengthen manifest weaknesses in:
    - a. computation.
    - b. number vocabulary.
    - c. verbalizing problems.
    - d. listening to directions.
    - e. reasoning.
    - f. process selections in problem-solving.

The approach to the three classes in number skills (Masonry and Maintenance(I), Sheet Metal and Auto Mechanics(II), and Electronics(III) was that of adult elementary education. Primary factors considered in structuring the classes were considering materials which could be related directly or indirectly to the trades studied, revising these materials in order to cause greatest interest on the part of the student, selecting a suitable-sized lesson of material for each class period, and designing each so as to cause a sense of accomplishment for the student at each class period. It was hoped that, if these factors were properly incorporated in the unit, the motivation problems would be minimized.

The mathematics coverage for Groups I and II(above) was to be less extensive than that for Group III. As a consequence, Groups I and II would receive only an exposure in mathematics including Arithmetic, Mensuration, and An Introduction to Algebra. Group III, on the other hand, was to receive Arithmetic, Algebra(intermediate level), Introductory Geometry, and Intuitive Trigonometry. In addition, special topics were to be selected to be unitized to provide enrichment materials for the various classes. These topics included income tax, business statements, banking procedures, insurance, consumer mathematics and an introduction to the slide rule. The unit approach described in Instruction in Reading was also used in Number Skills.

Instructional Materials

The design of the unit of instruction was the most important consideration in the structure of the classes. It was felt that each unit should incorporate as many of the following aspects as would be possible.

I. Each unit was to include lessons which would be short(cover 50 minutes of instruction).

II. Each lesson was to be designed to minimize the lecture aspect and allow the greatest time for the student to respond and/or perform some assignment.

III. Each lesson was to consider some topic of mathematics related to the trade area.

IV. Each lesson would include oral, written and reading features.

V. The content of each unit was to be useful for the student in the immediate future.

VI. Each unit was to refer back, as much as possible, on the previous units.

VII. Each lesson was to contain some materials from previous class periods.

Number Skills lessons usually contained three or four parts: (1) Vocabulary, (2) Motivation(introductory remarks and/or explanation of some concept or topic), (3) computed examples and (4) class discussion exercises. The procedures were similar to those of the reading classes. The men probably handled more three dimensional materials and measurement instruments, however.

To achieve maximum motivation of the materials the introductory remarks were to be concrete, intuitive, and in language and terms familiar to the trainee. The computed examples were to be understandable, designed so that the trainee might be able to follow them through with a minimum of teacher explanation. The class discussion exercises were to be designed to allow the trainee to work the greater part of them after considering the computed examples. In some cases, the problems in the class discussion exercises combined two or more related topics into their unifying sense. These problems also were used to motivate future concepts in mathematics, as well as to draw in the related aspect of the concept.

The problems encountered with Instructional Problems in the mathematics classes were those to be expected in adult education classes. These might be handled in four broad categories: (1) aptitude, (2) student motivation, (3) classroom decorum, and (4) the levels of instruction in each class.

For the most part the attitudes of the students were positive and they showed a definite concern for instruction in mathematics. Many of the trainees had been confronted with mathematics in their pursuit of jobs which required exams of the civil service type. Negative attitudes and indifference to instruction seemed to be caused primarily by personality traits, low abilities in mathematical skills, and problems, both economic and domestic. Where the problem of attitudes did not seem too complex, it was attacked by attempting to instill greater confidence in the student and by reassuring the student that achievement at a certain level was possible and desirous. Relief for domestic and economic problems usually had to be handled by a combination of forces such as the vocational counselor and the social worker. Since the greater number of trainees were desirous of self-improvement, the problem of motivation of the students was restricted to causing and maintaining the trainees interest in each phase of the mathematics instruction. Although this motivation problem was not evident when the mathematical material was obviously related to the trade area, it could be detected when topics were covered that seemed unrelated. When recognized, topics of this nature were preceded by remarks which pointed up the importance or consequence of their study.

Finally, the problem of levels of achievement within a class seemed to be of greatest concern. As would be expected, the faculty found individuals within the class who could be classified as fast or as slow learners. The lessons were pitched at the norm group with consideration for the slower and faster person being taken in the student response time. That is, each student was caused to understand that he should work at his own rate. The class discussion exercises were limited so that even the slower learner could finish them within the class period. In order that the faster learner might work at his own rate, either the following lessons were assigned after completing a lesson or he was given additional materials at a much higher level. On occasion it was found that a student might have been exposed to some topic or other. In this case, the student was asked to help guide the motivation discussions or to assist a slower person.

In attempting to evaluate the achievement of the men, the mathematics instruction staff felt that on the whole the achievement of the pupils had been noticeable and significant. In terms of desire and ability to receive materials in mathematics, both concretely and abstractly, the students showed a marked improvement. After finding that they can solve problems mathematically, many have shown interest in classes at higher levels and have expressed their interest by approaching problem situations from other sources. To cite two examples of students' interest might point up its noticeability. One student reported that he now spent an hour or two each evening studying from his son's junior high school algebra text. During the summer school session several of the students in the electronics group voluntarily attended a class in modern mathematics designed for high-ability high school students.

Number skills should pose an easier problem in mass instruction of undereducated persons if efforts to raise reading levels are successful. Success in this area might have to wait until this has been done in many cases, however, instructional materials are now available for almost every technical area of technical work. The materials of the Delmar Co., of Albany, N. Y. seem especially valuable. These materials need to be graded, however. A barely literate person who would like to train for masonry trades would need mathematics books written both at the fourth or fifth grade levels and at the present upper intermediate levels if he is to grow in the ability to do calculations in this field.

Teaching Occupational Information and Human Relations

The major problems in teaching in this area concerned the determination of an approach and the development of materials of instruction. A very careful review of the available literature on Occupational Information and Human Relations revealed that such materials were not designed for the unemployed, unskilled male adults who are heads of households. Also, it was learned during recruitment of trainees that their educational and socio-economic cultural patterns of living were different and would warrant special instructional materials and procedures. Thus, conferences were held with these persons to ascertain the types of problems encountered by the unemployed who came to them for assistance in order that materials might be developed:

1. Occupations Specialist--Virginia Employment Service.
2. Local Director of State Apprenticeship Training Bureau.
3. Director and Supervisors, Apprentice Training Program, U. S. Naval Supply Center.
4. Local Radio Commentator--Women's Home Hour Program.
5. Members of Labor and Management who attended the preplanning conference.
6. Some of the leading ministers of the community.

Instructional Procedures

This sort of course seems to go best if persons are made to think and are encouraged to verbalize on their considerations. Accordingly, the staff experimented with the following procedures or techniques of presentation:

1. Group Dynamics: The dividing of the class into four small groups with each group selecting its leader and recorder. This technique offered the withdrawing trainee an opportunity to learn to express himself first, in his small group and then to the entire class. Also, this technique afforded the TALKATIVE trainee a "sounding board" for some of his "penned-up philosophies of life" which he soon found classmates attacking as being unsound principles.
2. The use of PROVERBS/THOUGHT FOR THE DAY, to introduce the(lesson)topic for discussion. People in this economic strata use this method of maintaining guidelines for themselves and their families.
3. The use of CARTOONS--Those everyday cartoons that depicted a definite humanistic lesson seemed applicable to the lesson topic. This was done mainly to bring out the less fluent members of the class.
4. Inspirational INCENTIVES--Poems or quotations that contained a moral or economic lesson needed for a given class session.
5. A wide use of films and resource persons.

It was during the early stages of the course that the mixing of various methods of presentation obtained the best results and so a combination was used.

As in the other areas, units of work were used as the basis for instruction by a thought for today" which was printed on a placard and placed on a stand at the front of the room. The thoughts were in the form of proverbs or folk "sayings" and these proved effective with these men. Some examples of "thoughts for the day" together with the related units were as follows:

Thought	Unit
"Your best is more than any boss will expect"	Why Workers Are Fired
"Everytime you speak, your mind is on parade"	Worker Relationships
"Keep company with good men and good men you will imitate"	Home and Community Relationships

The men showed great interest in almost every phase of daily living. Representatives from the Home Economics Department gave lecture-demonstration series on low-cost meal planning and shopping techniques. Class sessions on financing were also effective. Loan sharks and slum landlords prey heavily on men from this economic strata. Interest rates on merchandies and contract purchases of slum homes when compared to conventional financing procedures constituted a welcome revelation to many.

Instructional Materials

As stated above, materials in this area for this economic strata had to be developed almost completely from the needs manifested by the trainees. Therefore, the teacher-made student unit was used in teaching and learning. The staff experimented with a human relations film series which proved effective. This series, produced by the military, deals with such values as honesty, group living, responsibility, moderation, self control and others. It is a product of the Armed Forces Film Series Exchange Service and was secured through the local Naval Base.

A series of cartoons entitled the Country Parson also proved effective. This was a collection of cartoons extolling certain virtues which was reporduced by the College mimeographing service. An example below is an attempt to impress a variety of virtues.

Some of the other materials used together with their units and sources are:

Materials	Source	Unit
The Manpower Needs Survey--Tidewater Area	Norfolk Office-Virginia Employment Commission	Future Trends in Employment
Feature Articles and Editorials on Employment Trends	New York Times Wall Street Journal Washington Post	Future Trends in Employment
At Your Service--Facts About Jobs	Virginia Employment Commission	Job Entry
Sample Letters of Application	Max Baer and Edward Roeber, Occupational Information-Science Research associates, Chicago, Illinois	Job Entry
Interview Procedures		
How To Get and Hold The Right Job	U. S. Employment Service	Job Entry
Some Reasons Why Workers Are Fired	Staff	Job Ethics
Working for the Federal Government	U. S. Civil Service Commission	Federal Employment

Materials	Source	Unit
A Stork Planning Plan	Emko Company, St. Louis, Missouri	Family Planning

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Instructional Problems

Few significant problems developed in this area, materials of instruction excepted. Once the objectives of the course were explained clearly and the discussion began, the work moved smoothly.

There was the problem of the counseling load which this course was in part designed to accentuate. It was here that the personal problems were brought to surface reflection and new insights gained. The need to have these problems considered individually became acute and a large amount of time was spent in counseling by the staff. This problem will be treated in the section on controlling attrition.

Guidance people who have studied the problems of low-income people at close range could make a contribution through the publication of texts designed to offer practical information concerning occupational and personal-social mobility. Until this is done, discussion group techniques utilizing alert teachers and materials from a variety of sources can be effective.

There is the great possibility that occupational information and human relations will not be stressed enough in retraining programs. In the attempts to upgrade, to move people from one social and economic strata to another, however, it can and should play a vital role.

VOCATIONAL-TECHNICAL EDUCATION

Conducting the skilled trades aspect of the experiment constituted another major phase of the project. The major objective of the skilled trades training was to develop and offer a program which would provide the trainees with sufficient salable skills to enter employment and make progress while employed.

Planning the Curricula

Prior to the development of specific syllabi for the various trades, the team of trade instructors held many group and individual conferences with experts in some phase of vocational-technical training. Among those participating were the state director and local supervisors of apprenticeship training, field representative, U. S. Department of Labor, director and employment superintendent, Public Works Division, U. S. Naval Air Station, Regional Director, Virginia State Employment Service and managers of Virginia State Employment Services in Virginia Beach, Portsmouth, Norfolk, and Suffolk.

Out of these conferences developed an all-day conference involving representatives of labor, management, government, teacher trainers in vocational industrial education, trade teachers and the project team. Chief visiting consultant was provided by the teacher training Service Studies T & I Branch, U. S. Office of Education. The conference served four distinct purposes, namely:

(1) To pinpoint the type of employable product which could be developed in a one-year training period.

(2) To agree on the course content which could most likely develop this employable product.

(3) To establish a close working relationship between the trade teachers and participating tradesmen, small business proprietors and work supervisors.

(4) To actively involve local employees and employers whose occupational interests were associated primarily with the five trades offered in the project. This involvement of local employer-employee groups was significantly important in the practicum phase of training and in placement after training was completed.

One other important aspect of the technical training program was the extent of shop teachers' experience and general "know how." Each teacher is a respected craftsman and with one exception, all have earned degrees in vocational industrial education. The fact that the instructional staff was staffed with skilled craftsmen with teaching experience minimized the serious problem of heterogeneity and made it much easier to manage.

Each shop instructor gave leadership to the task of retailoring his program to fit the one year time limit imposed by MDTA and contractural agreements with the United States Office of Education. He was required to be the personal advisor to the trainees in his shop and set the pattern for standards of work, cleanliness, promptness and industriousness. Shops were organized to simulate the relationships which exist between employees and employers.

The five trades (bricklaying, auto mechanics, electronics, sheet metal and building maintenance) were housed in well-equipped shops. Most shop equipment was college-owned and present in the laboratories where a college-sponsored program of vocational-technical training was in progress concomitantly. Supplemental equipment and materials were made available through the Cooperative Research Division grant.

The shop program followed, generally, the operations and jobs agreed upon in pretraining sessions. (See Course Outlines Appendix) No great difficulty was experienced with teaching the trainees nor was there a single serious disciplinary case reported. Teacher conferences were held frequently at which times successful and unsuccessful techniques and experiences were shared. These conferences also provided an opportunity to keep in focus the primary objectives of the project.

All trainees were required to attend shop classes for four hours daily which amounted to twenty hours per week. In an attempt to equate the training for groups "A" and "B", the time of day such training was given was considered important. It was, therefore, decided that for the first six months group "B" would attend shop classes in the morning hours and group "A" in the afternoon. This time schedule was reversed after the first six months.

Operation of Technical Program

The technical program was operated in three basic phases: namely: orientation, basic skills and intensive practice phases. The amount of time allocated to each phase varied with the trade and judgments of the instructors.

During the orientation phase, an attempt was made to introduce the trainee to his field of work. This was done by bringing in tradesmen to discuss the field trips to jobs where tradesmen were performing and by the use of film. Information pertaining to working conditions, pay, promotional practices, skills to be learned, etc. was made available.

Orientation to Shop Operation. The trainee was given an overview of his shop course so that he knew in some detail just what he was expected to learn from his shop experiences. In addition to learning the aims of the course, he learned how his particular shop was to be organized and how this organization was to operate. Following are examples of items discussed as taken from the syllabi developed for Sheet Metal:

No. 1 STARTING THE INSTRUCTION

Objectives:

1. To organize class
2. To explain course objectives and teaching methods
3. To give students basic safety instruction

Teaching Materials:

1. Textbooks
2. Related theory sheets
3. Personnel record forms
4. Safety rules
5. Personnel organization forms
6. Bibliography sheets
7. Student handbooks

Aims of Course:

Discuss the trade, its scope and applications

A. Point out that at the end of the course the students should be able to:

   1. Use hand tools common to the trade
   2. Use, adjust and maintain the common machines of the trade
   3. Lay out simple patterns
   4. Form and assemble typical jobs found in industry
   5. Properly observe safety regulations

Class Organization

A. Check roll

B. Have students fill out personnel record forms

C. Explain use of these forms

D. Explain grading system

   1. progress charts
   2. personnel records
   3. periodic tests and final tests
   4. periodic grades

E. Inform students about notebooks, clothing and lockers

F. Pass out and explain safety rules

G. Explain how accidents should be reported and how first aid is handled

H. Explain shop regulations

   1. Time to start work ______________
   2. Lecture time ______________
   3. Time to clean up ______________
   4. Change clothes ______________

I. Explain closing for the day--pass out forms
    1. Student personnel system
    2. Clean-up duties

J. Explain school regulations--pass out student handbook
    1. absences
    2. tardiness
    3. excuses

K. Explain and show tool check system

L. Inspect the shop and explain machines and their uses; point out safety rules

During this phase of training several trainees were permitted to change fields but balance in number of trainees by trade was maintained.

Basic Skills and Intensive Practice

The basic skills phase involved learning basic manipulative operations, learning basic information about these operations and learning the proper use of tools. The third phase involved intensive trade practice designed to develop speed and competence in manipulative skills. There was no distinct time allocation for basic skill and intensive practice phases. Shop instructors provided for each as the nature of the trade naturally dictated.

The basic skill phase and the intensive practice phase were alternated in the auto mechanics shop. This practice fitted the nature of this particular shop after the basic training had reached a point where the trainee had learned to use his basic hand tools. The adopted procedure was to complete the basic instruction of a given unit or job and then develop manipulative skills through practice on simulated shop units.

After the student had reached a satisfactory degree of proficiency on simulated jobs, intensive practice opportunities were provided by permitting a limited number of automobiles to be brought into the shop class for repairs at no cost to the owners except for parts. These jobs were limited to a particular category as designated by the instructors.

The procedure was entirely different in the masonry shop. In this shop much more time was required to learn basic skills and proper use of tools. The beginning masonry student had to learn how to spread mortar so that he could lay bricks plumb and level. He had to learn how to face his bricks and keep the surface clean; how to use his level to plumb his work; how to slick his joints; how to cut bricks with a chisel and a brick hammer and several other basic operations before he could be permitted to practice on live jobs. The vehicle on which he learned the basic operations and developed his skills was a carefully selected group of projects which he constructed in the masonry shop. After the trainee had developed optimum coordination on simple projects such as small 12" x 12" piers, soldier courses, door step construction and intensive line or straight wall practice. After this phase of training, the class was committed to construct a two-story all-masonry Masonic Lodge Hall. All subsequent instruction was geared to the planning and construction of that building.

The construction of this building provided the vehicle by which many practical lessons were taught and many lasting impressions were made. Every problem and every favorable or unfavorable circumstance became the basis for a practical lesson. The weather conditions made it necessary to plan for rainy days, tardiness and absenteeism and their effects on the job were demonstrated, proper care of tools was effectively demonstrated along with many other new or old lessons which were taught or reemphasized with greater effectiveness in this setting. Many new and valuable experiences were gained which were not possible in the shop. Live practice with plumbing window and door jambs, setting brick and stone window sills, setting parapet wall coping, setting steel and masonry lintels, building large chimney, laying out exterior and interior walls were but a few of the experiences provided by the masonry "live job."

The procedure in the sheet metal shop was similar to that described in the masonry shop in which "live job" practice followed basic skill development. The progress chart revealed a listing order of each job to be done by the trainee. The related information lesson sheets showed the theory lessons that were to be covered and the order in which they to be taken in class. Each student was issued a set of textbooks and a related information lessons list at the beginning of the program. With these guides the student was able to perform his shop work with the proper continuity in spite of his absence from class. Textbooks were supplemented with job sheets and related information sheets so that each trainee was able to work and study independently. Regular shop projects were scaled models due to the vast amount of materials required for full sized projects. The work on "live jobs" in sheet metal, therefore, became a mandatory part of the training.

Live jobs were divided into two classes: small jobs which could be accomplished in the shop and large jobs which required fabrication in the shop and installation someplace outside the shop.

Small jobs were used to supplement shop experiences by providing an opportunity to explore mass production techniques. In cases where many of the same items were produced, the job was broken down into operations and trainees were so assigned. Techniques of pattern duplication, jigs and guages were employed to familiarize trainees with these devices which are in common use on the job.

The electronics course followed the phases as outlined in the plan: orientation phase, basic training and intensive practice. This course was essentially different from the other shop courses in that it consisted primarily of theory and experimentation.

The building maintenance program was operated much like the auto mechanics course. Orientation preceded basic training but live job practice was provided alternately with basic training. This course was developed with the ultimate objective of producing a maintenance man who knew how to perform the operational tasks of building maintenance; how to schedule work for any given building and who also understood simple mechanical maintenance jobs such as plumbing repairs, carpentry repairs, electrical repairs, care of maintenance equipment; who possessed some knowledge of firemanship, grounds care and general "handy man" operations necessary to maintaining a modern building.

The strong feature of this program was the intensive practice or practicum phase of the training which provided each trainee with a variety of maintenance experiences. After the completion of each unit, practical experience was provided both on and off campus. Through the cooperation of building maintenance contractors, jobs ranging from cleaning light fixtures to rug shampooing were provided.

The Problem of Heterogeneity

Problems of individual differences among students were greatly accented by absenteeism of the excusable and unexcusable variety. In order to overcome this problem it was necessary to use small group and individual instruction. Using this method the trainee pursued his course of study, learned his lesson and progressed as rapidly as he could. The teacher on the other hand assumed the role of assisting him in his work, helping him when he got into difficulty, keeping his interest alive, inspiring him to want to learn and evaluating what he did.

The instructional materials required to aid the teacher and the trainee were the Course Outline, workbooks, reference books, textbooks, films, charts, individual personnel record cards, teacher's roll book, mark-ups, models, and live jobs.

The above listed instructional materials were not new or unusual but, in some instances, their use in the project required some interesting innovations. Courses of study development as a guide for instruction and progress charts as evaluative instruments were cases in point. In the process of developing these courses of study, the trades were broken down into either jobs and/or operations. In a trade like brickmasonry where there were many jobs the trade was analyzed by the "job" method. A typical masonry job was mixing a batch of mortar(see figure I). To teach this basic job, it was further broken down into operations, basic information, related information and references. Under operations detailed steps such as screening the sand and measuring the sand and lime were listed. The basic information and the related information differed in that the basic information column included only the information which was necessary to perform the operations. The related information, on the other hand, included additional information which would increase the depth of understanding and provide additional study material for the more capable learners. The reference column suggested a source of additional information by listing a letter and a number which corresponded to a source and page on a posted bibliography.

In the sheet metal shop, progress charts were used to record the quality of each project as it was completed. As the work was evaluated, the errors and weaknesses were pointed out to the trainee which gave him an immediate evaluation of his progress. As projects were completed, a continuous record developed showing the overall progress of the trainee. Posting the progress charts on the bulletin board enabled each trainee to examine his record at anytime. Because of this exposure the trainees were, generally, motivated to compare and improve their performances.

In conjunction with the progress chart, weekly production charts were used to record the quality of work produced by each trainee and the quality of his performance while producing a project. Each project was recorded by number as it was completed so that the total output during any week could be determined. This chart in conjunction with the progress chart gave a fairly accurate picture of the students growth.

At the close of each quarter, the ratings from the progress charts and the weekly production charts were combined into a numerical score for each trainee. These scores were shown in a graphic representation so that comparative standings could be made. This made it possible for each trainee to see graphically how his overall performance compared with other members of the class. This proved to be an effective motivational device.

Fig. I

MORTAR

MIX A BATCH OF HYDRATED LIME MORTAR

OPERATIONS	BASIC INFORMATION	RELATED INFORMATION	REFERENCES
Screen sand	Place screen at proper angle	Functions of mortar Specification of sand	B-29
Measure material	Shovels of sand per bag Proportion of lime to sand	Types and kinds of sand Ratio and proportion Unit of measurement	C-155 Z-30
Dry Mix	Place ½ of sand and spread-add lime-add remaining sand. Chop with hoe starting at one end of box. Repeat until uniformed color is obtained.	Mortar mixing equipment 1. Hand mixing vs. mechanical	B-30 C-6 G1-56
Wet Mix	Pull mortar to one end. Add water to vacant end. Pull mortar in water using chopping method	Care of mortar mixing equipment Moisture content of sand	E-17
	Safety precaution: Protection of eyes from mortar splash.	First Aid	

Va. T&I.

COURSE PERIOD

Jobs or Operations

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
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PROJECT D-054

TRAINING AND EXPERIENCE IN MAINTENANCE TECHNOLOGY

Trainees in the course in building maintenance have had approximately 1000 hours of training in all areas of building upkeep and care. This training consisted of theory and practice in the following areas:

I. Electrical Maintenance....................180 hrs.
   - A. Construction of Circuits
   - B. Replacement of Switches
   - C. Replacement of Receptacles
   - D. Care and Maintenance of Motors
   - E. Repair and Replacement of Fluorescent and Incandescent Fixtures
   - F. Minor Trouble Shooting
   - G. Use of Measuring Instruments
     - 1. Ammeter, voltmeter, and multimeter

II. Operational Tasks.........................360 hrs.
   - A. Floors and Floor Covering
     - 1. Sealing and waxing hard floors
     - 2. Sealing, finishing and waxing wood floors
     - 3. Cleaning and refinishing gym floors
     - 4. Operating floor care equipment and machinery
       - (a) automatic scrubber
       - (b) wet-dry vacuum
       - (c) electric floor machine
     - 5. Shampooing carpets and rugs
     - 6. Selection and use of proper materials
     - 7. Resilient floor care

III. Work schedules............................40 hrs.
   - A. Calculate Job Time Requirements
   - B. Methods of Determining Routine Jobs and Frequency
   - C. Arranging Schedules According to Seasons

IV. Carpentry..................................80 hrs.
   - A. Care and Use of Tools
   - B. Replacing Hinges
   - C. Replacing Locks
   - D. Cut Glass
   - E. Glaze and Repair Window Sash

V. Plumbing Maintenance......................40 hrs
  A. Repair and Service
    1. Stoppage in sewers and traps
    2. Faucets and valve repair
    3. Fixtures
    4. Septic tanks
    5. Water heaters

  B. Measuring, Cutting and Threading Pipe

VI. Firemanship...........................80 hrs.
  A. Repair and Service
    1. Oil-fired boilers and furnaces
    2. Gas-fired boilers and furnaces
  B. Punch Tubes
  C. Water Treatment
  D. Adjust Controls

VII. Grounds Care and Maintenance.............20 hrs.
  A. Operation of Equipment and Machinery
    1. Hand power mowers and edgers
    2. Riding type mowers
    3. Re-seeding and landscaping

VIII. Air Conditioning Equipment................40 hrs.
  A. Maintenance and Care of Motors and Controls
    1. Lubrication of motors
    2. Adjustment of controls
    3. Minor replacements

IX. General Maintenance Practice.............160 hrs.
  A. During this time the trainees were assigned to actual job situations along with the maintenance personnel at the College in order to receive actual experience in the different maintenance operations.

PROJECT D-054

TRAINING AND EXPERIENCE IN SHEET METAL

During the course of training program in sheet metal, the trainees have received approximately 1040 hours of training in the following areas:

I. Use and Care of Hand Tools.. ....60 hrs.

II. Use and Maintenance of Machines.............120 hrs.

III. Fundamentals of Simple Layout Work..........80 hrs.

IV. Methods of Cutting Sheet Metal..............180 hrs.
  A. Use of Hand Snips
  B. Use of Squaring Shears
  C. Use of Power Shears
  D. Use of Drill Presses
  E. Use of Punches

V. Methods of Forming Sheet Metal..............180 hrs.
  A. Braking
  B. Rolling
  C. Use of Bench Machines
  D. Use of Stakes

VI. Methods of Fasting Sheet Metal..............180 hrs.
  A. Soldering
  B. Seaming
  C. Riveting
  D. Spot Welding

VII. Fabrication of Heating and Air Conditioning Systems.....................................80 hrs.

VIII. Erection of Heating and Air Conditioning Systems....................................160 hrs.

PROJECT D-054

TRAINING AND EXPERIENCE IN ELECTRONICS

The following areas with the approximate time is indicative of the instruction received by the graduate in the electronics trade:

I.	Basic Components and Principles	108 hrs.
II.	Tubes and Allied Circuits	112 hrs.
III.	Power Supplies	60 hrs.
IV.	Load Division	40 hrs.
V.	AM Radio Systems	160 hrs.
VI.	FM, Radio and Television Systems	240 hrs.
VII.	Industrial Controls and Servo Mechanism	60 hrs.
VIII.	Transistors and Allied Circuiting	60 hrs.
IX.	Stock and Parts Control	40 hrs.
X.	Mobile Equipment	40 hrs.

This instruction has been in conjunction with experiences in reading and interpretation of schematic diagrams, testing and repairing circuits, reading and evaluation of meters and test equipment, such as ohmmeter, ammeter, voltmeter, oscilliscopes, galvanometers and signal generators; fabrication systems, sound equipment, industrial controls, repair and maintenance of test equipment, design, construction and analyzing of basic circuits including rectifiers, amplifiers and oscillators.

PROJECT D-054

TRAINING AND EXPERIENCE IN MASONRY

These trainees have had bricklaying experience in the shop and on the job that was designed to prepare them to enter the bricklaying trade as advance apprentices. They have completed 1300 hours of training. The trainee has had 65 hours of related work and other work experiences in the following areas:

I. Laying Bricks, including........................970 hrs.
    A. Mixing mortar, lime and patent mortar; spreading mortar; bonding and tying.
    B. Plain exterior brickwork (straight wall work), backing up brickwork
    C. Building arches (flat), columns, piers, pilasters, leads with plumb jambs and corners.
    D. Building chimneys, flues and stairway walls.
    E. Setting sills, door and window with brick.
    F. Steps, with and without buttresses and blocks.

II. Laying Building Units, including................60 hrs.
    A. Block Arching.
    B. Cutting, Setting and Pointing of Cement Blocks, Lintels and Artificial Stone.

III. Pointing and Cleaning, including................40 hrs.
    A. Pointing Bricks and Blocks
    B. Cleaning Bricks (water, acid)

IV. Fireproofing including.........................150 hrs.
    A. Building Walls, Loadbearing, Party and Partition.

V. Care and Use of Tools and Equipment, including..80 hrs.
    A.. Trowels, Brickhammer, Plumb Rules, Scaffolds, Cutting Saws, Mortar Mixing Equipment, etc.

PROJECT D-054

TRAINING AND EXPERIENCE IN AUTOMOTIVE MECHANICS

The graduates from this class have been given one year of training in general automotive mechanics. The training consisted of over 1,000 hours of shop practice and theory. The shop practice was given on many makes and models of cars. Units on which they have studied are as follows:

I. Brake System..100 hrs.
   - A. Installation of Brake Lining
   - B. Turning Brake Drums
   - C. Installation of Master and Wheel
   - D. Adjusting and Bleeding the System, etc.

II. Front Suspension System..........................100 hrs.
   - A. Removal and Replacement of Components
   - B. Adjustment of Caster, Comber, and Toe-In

III. Rear Axle and Suspension..........................60 hrs.
   - A. Installation of Springs, Shock Absorber Axle Shafts, Axle Bearings and Seals

IV. Transmission..60 hrs.
   - A. Removal, Minor Repair and Installation of Standard Three-Speed Transmission

V. Engine..200 hrs.
   - A. Removal and Replacement of Engines
   - B. Engine Overhaul, including Measuring Cylinder Taper, Crank Shaft out-of-roundness, and Cylinder Head Warpage
   - C. Installation of Piston Rings, Insert Bearings, etc;Grinding Valves, Refacing, Rockers,etc.

VI. Engine Tune-Up......................................60 hrs.
   - A. Compression Tests, Cleaning Sparkplugs, Installation of Points, Fuel Pump, Carburetors and Other Services Relating to Tune-Ups

VII. Fuel and Electric Systems........................80 hrs.
   A. Remove and Replace Components and Adjustment of Same

VIII. General Automotive Repair........................250 hrs.
   A. In this unit the student learned to apply knowledge acquired in previous units by analyzing problems to determine their cause and then proceed to make proper corrections.

JOB PLACEMENT AND FOLLOW-UP PHASE

Placement Integral Part of Program

The following components of the program were carried out with a view toward placement:

1. Employers in each of the trades were invited to the college for a one-day curriculum planning session to make sure that the skills to be taught would be those in actual demand.
2. Trainees were made employment-conscious in initial interviews and in their training classes so that increasingly they spoke of when I get on the job , etc.
3. An intensive drive for jobs was begun two months prior to graduation. Contacts were made with potential employers throughout Norfolk, Newport News, Tidewater, Virginia and Elizabeth City, N. C. Instructors, placement officers and administrators were called on to explain the competencies of the men, and the need for a chance to become self-supporting citizens. To pool the know-how and to coordinate efforts, a joint conference was held with the Virginia Employment Office, College Placement Office and the Project Team. However, in spite of this drive, at graduation approximately only one-third of the men were sure of employment.
4. Immediately following graduation, the drive for jobs was intensified and continued for more than 90 days. An impediment to employment at this time throughout the area was the order issued to increase salaries within the operating budgets at government installations. This order left no funds to add to or replace personnel let out from these installations.

Also, it meant a general tightening of the job market throughout the area, since government installations are the largest employers--and whatever affects them affects the total employment in the area. Top officials uniformly expressed concern, but saw no employment possibilities.

A bus load of 20 men were carried to Newport News Shipbuilding Company for application and interview. Three weeks later two of them were employed.

Twelve sheet metal men motored to Hayes Aircraft 60 miles away in Elizabeth City, N. C. Nine were employed, but let out after two weeks due to a cutback in orders.

(5) Each trainee was provided a Work Experience form to record jobs held, and pay received with postage-free envelopes for mailing at the end of the third month. In addition, contact was kept with the men through instructors who were very helpful in referring the men to jobs.

At the end of six months, a check of the employment revealed: (See Table II) That 73.4 percent of the graduates were employed in their trades or jobs related to their trades as may be seen in table II and table III.

Table II

CUMULATIVE REPORT OF NORFOLK STATE TRAINEE JOB EXPERIENCE AT END OF PERIOD, NOVEMBER 15, 1963-APRIL 8, 1964

Total Number

	No.	Percent
Trainees who have been employed in or related to their trade:	66	73.4
Trainees who have been employed, but not in or related to their trade:	12	13.3
Unconfirmed:	12	13.3
Total	90	100.0

Table III

Total By Trades

Trade	In Trade or Related Trade	Non-Trade	Unconfirmed**
Auto Mechanics	11-61%	2-11%	5-28%
Electronics*	11-61%	5-28%	2-11%
Maintenance	11-61%	2-12%	5-27%
Masonry	15-94%	1-6%	None
Sheet Metal	18-90%	2-10%	None
Total	66-74.4	12-13.3	12-13.3

*Electronics experience demands generally higher than possessed by trainees, particularly in government employment.

**Not visited on job to confirm the nature of jobs held.

SOURCES OF DATA

The data collected in the study fell into five categories: First, there was the personal interview instrument on which confidential personal data of trainees were collected. Such information as age, sex, health, educational background, work history and all the myriad pieces of information about a person which student personnel workers would utilize were collected in the initial interview with each applicant. These data were useful for selecting enrollees and assigning them to equated groups as well as for counseling.

The second type of data included scores from standardized tests which were given to trainees at the beginning and again at the end of the training period. These tests were: (1) The General Aptitude Test Battery administered by the State employment service, (2) Gates Reading Survey, (3) Army Beta Intelligence Test, and the SRA Arithmetic Test. These tests were used as part of the process of equating the experimental and control groups.

A third type of data consisted of the grades and evaluation of the instructors. The degree of progress of trainees was determined by ordinary classroom grades. These data were used as the criteria for success (i.e. passing the course) in course work.

The fourth type of data was the recorded data about the enrollees obtained from the student personnel service. Attendance records, placement records, counselor's notes and case history material fell into this category.

The fifth type of data was collected with the follow-up instrument. These data made it possible to make pragmatic comparisons between the experimental and control groups and also to determine the effects of various treatments on the groups. Such items as (1) type of employment, (2) weeks of employment, (3) average weekly earnings, (4) advancement, (5) personal satisfaction constituted the indexes used. These follow-up data were secured through personal interviews by project staff members and by mail. Some out-of-town respondents were contacted by mail and by personal contact.

CHAPTER III

ANALYSIS OF DATA

FOLLOW UP AND WORK EXPERIENCE OF TRAINEES

This section will contain an analysis of the general data. In the analysis of these data for purposes of determining significant differences, the standard error of the difference between two proportions, standard error of the difference between two means, assuming the null hypothesis, and analyses of variance were used. Differences were considered significant at or below the 5 percent level of confidence.

For purposes of this study, a man was considered working at his trade or in areas related to his trade if he was in that position at the time he was interviewed. Other investigators have considered a man's employment status to be that field or job which has been his longest or most substantial occupation although he may have been following a different occupation at the time of contact. Sufficient data in the study will reveal contact respondents have had with their trade field during the year under investigation.

ANALYSIS OF DATA

Ninety trainees completed the training on November 15, 1963, to face a temporarily declining labor market in the Tidewater area. The weather was cold and rainy, automation had just begun to appear on the docks in Norfolk and all federal installations in the area had received orders to reduce their work force.

In spite of the unfortunate fortuitous events, the combined efforts of the College Placement service, the Virginia State Employment service in Norfolk with assistance from many small and large local employers, a third of the graduates were offered jobs in their trades on the day training was completed.

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In spite of the unfortunate fortuitous events, the combined efforts of the College Placement service, the Virginia State Employment service in Norfolk with assistance from many small and large local employers, a third of the graduates were offered jobs in their trades on the day training was completed.

Eighty-three of the ninety graduates or 92 percent were contacted for this report. Initially, there were fifty men in each of two experimental groups(A & B) and fifty in each of two control groups(C & D). Table IV reveals the number and percent contacted and employed in groups A, B, C, and D.

Table IV.

NUMBER AND PERCENT OF EMPLOYED AND UNEMPLOYED
IN GROUPS A, B, C, AND D AT END OF YEAR

	Group A		Group B		ALL A&B		Group C		Group D		ALL C&D	
	N	%	N	%	N	%	N	%	N	%	N	%
Employed	37 -	95	32 -	74	69-	83	19 -	59	24 -	73	43 -	66
Unemployed	2 -	5	12 -	26	14 -	17	13 -	41	9 -	27	22 -	34
TOTAL	39 -	100%	44 -	100%	83 -	100	32 -	100%	33 -	100%	65 -	100%

Of the 44 trainees who graduated in group A, 39 were contacted and 37 or 95 percent were employed. Only two men were unemployed in this group--one of which was chronically ill and the other was in the armed service. These two may be considered "not available for employment."

Group B contained forty-seven graduates. Forty-four were contacted in the follow up. Of the 44 contacted, 32 or 74 percent were employed and 11 or 26 percent were unemployed at time of contact. The difference between the percent of employment in group A and group B is significant at the .01 percent level of confidence.

Thirty-two men in group C and 33 in group D compiled contact percentages of 64 percent and 66 percent, respectively. Of those reached in group C, 59 percent were employed and in group D, 73 percent were employed.

A clearer picture of employment distribution of graduates may be seen in Table V where occupations were classified and divided into six occupational groups:

Group 1 refers to those graduates working in their trades or jobs related to their trades.

Group 2 refers to those graduates working in trade fields, other than those studied, as journeymen, apprentice, learners, helpers or any occupation leading to craftsman's rating.

Group 3 refers to those working in trade fields, other than those studied but not in occupations which would lead to craftsman's rating.

Group 4 refers to those employed in sales or managerial jobs but not related to trades of their training.

Group 5 refers to those employed in unskilled occupations not related to trades trained for.

Group 6 refers to the unemployed.

Table V.

OCCUPATIONAL STATUS OF GRADUATES OF PROJECT D-054
ONE YEAR AFTER GRADUATION

Major Groups	Number in Group	Number Contacted	Percent Contacted	Occupational Status*					
				1	2	3	4	5	6
A	43	39	90	22	7	4	2	2	2
B	47	44	93	15	6	3	5	4	11
TOTAL	90	83	92	37	13	7	7	6	13

Table V reveals the employment status in group A and group B. In group A, 39 graduates were contacted and at the time of interview 22 were employed in their trade or related areas; seven were employed in some other skilled trade or job which would lead to journeymanship; four were working in jobs related to other trades but not in jobs leading to craftsman's rating;

two were employed as managers or salesmen in jobs not related to their trade; five were employed in unrelated unskilled jobs and two were unemployed but unavailable for employment. Group B compares favorably with group A in all categories except in number employed in trade or job related to trade trained for. Here, group B reveals 15 or 35 percent and group A reveals 22 or 56 percent. Group B also had 11 or 25 percent unemployed and group A had 2 or 5 percent unemployed. The difference in employment status between these groups(A & B) is significant above the .01 percent level which indicates that this difference was not a chance variation.

This decline in number of trainees working in areas of their training may be due to several relevant factors which shall be pursued further when data dealing with "reasons some graduates are not working at the trades for which they were trained," are analyzed.

Table VI reveals the distribution of graduates, by trade, working in their trade or trade field. In each trade, except masonry, a higher percent of men in group A than in group B were working in their trade fields.

Table VI

DISTRIBUTION OF GRADUATES OF PROJECT D-054
WORKING IN TRADE OR RELATED AREA,BY TRADES

	Number Graduated		Number Reporting		Number Working in Trade Field		Percent	
	A	B	A	B	A	B	A	B
Auto Mechanics	8	10	7	9	5	2	70	22
Electronics	10	8	7	8	5	2	70	25
Maintenance	9	9	9	9	5	2	55	25
Masonry	6	10	6	10	3	7	50	70
Sheet Metal	10	10	10	8	4	2	40	25
TOTAL	43	47	39	44	22	15	56	35

Twenty-six respondents in group A and 32 respondents in group B reacted to the question: "If you are not working at your trade, what would you give as the reason?" Obviously some men who were working in jobs related to their trade also answered this question. This accounts for the large number of reactions in each group. The question was unstructured which permitted trainees to state their reasons freely. A total of more than twenty different reasons were later condensed to eleven.

Since the number working in jobs in/or related to their trades seemed to diminish from the high percent employed six months after graduation, according to the results from a questionnaire circulated to program graduates, the reasons graduates give should take on added importance. Table VII reveals that 17 percent of group A and 14 percent of group B were not working in their trade fields for reasons relating to pay. Eleven percent in group A simply left the job in their trade fields because the pay was too low. Upon closer and further interrogation into this problem, it was found that some trainees had found jobs "on their own" as learners at low pay with promises of advances as they became more familiar with the work. After several months with no promised raises and at salaries lower than unskilled laborers, they changed jobs. The trainees claimed that their job assignments, in some instances, were manipulated so that it was easy for employers to show that they could not perform as competently as journeymen mechanics. This was particularly in the sheet metal trade.

Five percent in group A and 9 percent in group B reported that lack of experience was the handicap which kept them from finding employment in their trade fields. Trainees reported that in general, employers would not hire inexperienced tradesmen. They usually required one to three years experience as a prerequisite to employment. This was true to a greater extent for those trained in electronics and auto mechanics. Although the problem of placement, from the standpoint of age, was not too great, three graduates in electronics, one in auto mechanics, and two in masonry indicated that their age was a barrier to finding employment in their fields. This finding seemed to be valid upon some investigation. Employers seemed reluctant to invest in new inexperienced employers probably because the remaining period of service was limited. In masonry the great physical demands required on some jobs made it difficult for some older men to endure.

Two trainees in group A and six in group B stated that they could not find the job they wanted; also five in group A and nine in group B stated that they could not find employment in their fields. Other reasons given by those who said that they could not find the jobs they wanted showed that some trainees in each group would not accept jobs which were offered for several casual reasons. They said that the pay was too low, the job was located too far from home(3). There were transportation problems(4), and jobs seemed temporary. These men had obviously become highly selective in the jobs they would accept. Of the five in group A and nine in group B who stated that they could not find employment, three of those in group B were between jobs as bricklayers and four had been employed in building maintenance, but had given the jobs up because the pay was too low. None of these men had informed the college nor the employment service that they had left their jobs nor did they reapply for employment. Of all the reasons given, no one admitted that his court record had any bearing on his employment status. A closer look revealed that some of the graduates did have court records, mostly of a misdemeanor or minor category.

Table VII.

REASONS TRAINEES GIVE FOR NOT WORKING IN THE TRADES FOR WHICH THEY WERE TRAINED

Reasons	Group A		Group B	
	N	Percent	N	Percent
1. Better pay in present job	4	15	3	10
2. Pay was too low	3	11	3	10
3. Did not like working conditions	0	0	0	0
4. Employers refused employment because of limited work experience	2	8	4	13
5. Nature of work makes jobs terminate when building is completed; between jobs	5	19	2	7
6. Health	1	4	1	3
7. Age problem	3	12	3	9
8. Laid off	0	0	0	0
9. Can't find job I want	2	8	6	19
10. Can't find employment	5	19	9	29
11. In Armed Service	1	4	0	0
TOTAL	26	100	31	100

It was soon discovered that major employers, including the United States Government, hire people on paper records instead of on practical individual assessment. If a trainee had a court record, the job market for him was much more restrictive than for other men. It was unlikely that any large firm would hire him. When this bitter fact became known, it jolted the trainees who were now concerned about their past personal histories. The anxiety and concern for getting a good job caused some to attempt to conceal court records. Some held jobs for from four to five months but eventually they were fired for concealment of court records and for giving false statements on their application form. Some others, otherwise qualified, were not accepted when they admitted having court records.

While some trainees were hampered by limitations imposed by personal histories, there were others who elected not to work in their fields. These men had worked in their trades but had gone into non-trade related jobs because the trade-related job had made it possible for them to gain new knowledge about other opportunities. Some stated that they had kindled new interest and had seized upon opportunities to work in other fields.

One example of these changes may be cited by the maintenance employee who accepted a job on an automobile assembly line; another was a sheet metal helper who took a job as a building maintenance man and a third was trained in electronics and elected to enter a U. S. Government electrical apprenticeship program. The difference in the mobility rate of trainees to elect new fields was not statistically significant between groups A and B. A sufficient number, however, did elect to work in fields for which they were not trained in the project to suspect that when new and different opportunities open to trainees, who have new knowledge about the job markets, they may tend to be diverted from their initial job objectives.

Table VIII

NUMBER TRAINEES IN GROUPS A AND B WHO DID NOT CHOOSE TO WORK AT THE TRADES TRAINED FOR

Group	Number in Group*	Number Choosing Job Not In Trade	Percent	Percent Difference
A	39	8	20%	11%
B	44	4	9%	

*Total number in groups who responded to final employment report forms.

The fact that seven trainees in group A and six in group B were working in trades other than those studied, but in jobs which would lead to craftmanship, may assume some importance when it is realized that this comprised 15.8 percent of the graduates interviewed as revealed in Table V. Two in group A and five in group B elected to be salesmen or managers in fields unrelated to the trades trained for. This comprised another 8.4 percent of the graduates.

Table VIII reveals further that 20 percent of group A and 9 percent of group B were working in fields not related to the trades in which they were trained by choice. Whether they will return to their original objective will require a period of time longer than the life of oject D-054. Trainees who have worked in the trade of their training since graduation and the length of time they were employed in months may be seen in Table IX. In group A, 32 men or 82 percent worked at the trades of their training for an average of 7.34 months. In group B, 32 men or 74 percent contacted worked at the trades of their training for an average of 6.84 months.

Table IX reveals that 64 men or 79 percent of all trainees contacted have worked at their trade for an average of 7.02 months since the completion of training on November 15, 1963. In group B, 32 men worked an average of 6.84 months and in group A, 32 men worked an average of 7.34 months. It may be recalled that only approximately one-third of the trainees were placed at the completion of training. Some initial placements in trade jobs were made as much as six months after graduation. This did not mean that trainees were unemployed while waiting for a job in their trade fields. This table, therefore, reflected only a portion of the employment records of groups A and B. The earnings of trainees while working at their trade ranged from $35 per week to $185 per week as may be seen in Table X.

Table IX

FREQUENCY DISTRIBUTION OF NUMBER MONTHS GROUPS A AND B WORKED IN TRADE OR RELATED AREAS

Number Months	Group A	Group B	Total
12	5	8	13
11	3	1	4
10	2	1	3
9	4	3	7
8	1	2	3
7	4	2	6
6	2	2	4
5	5	2	7
4	0	1	1
3	3	4	7
2	0	1	1
1	4	5	9
TOTAL	32	32	64
Average	7.34 months	6.84 months	7.02 months

Table X

WEEKLY SALARIES PAID TRAINEES WHILE WORKING IN TRADE OR TRADE-RELATED JOBS

Weekly Salaries	Group A	Group B
$180 - 189	2	1
170 - 179	1 1	1
160 - 169	0	3
150 - 159	0	0
140 - 149	0	0
130 - 139	2	0
120 - 129	1	0
110 - 119	0	3
100 - 109	2	3
90 - 99	1	1
80 - 89	3	3
70 - 79	4	6
60 - 69	3	1
50 - 59	7	6
40 - 49	4	3
30 - 39	2	1
TOTAL	32	32
	M = $75.70	M = $85.68

Total Earned--A	$72,672
Total Earned--B	68,544
Grand Total	$141,216

Seven bricklayers and an automobile salesman earning salaries well beyond $100 per week contributed significantly towards raising the mean weekly earnings of group B which was $85.68 as opposed to $75.50 in group A. Likewise, some of the low salaries in group A were for part-time work. Total earnings from trade jobs in group A was approximately $72,600 and $68,540.0 in group B. The difference between the earnings in groups A and B was $4,128. The total earnings in trade work for all trainees was $141,216.

Significantly, the mean salaries of the men were reversed in favor of group A when rate of pay at time of the interview is considered. The mean weekly earnings of group A was $70 as compared to $58 at this point. Significantly, too, a greater proportion of "A" group men were employed at the time of the interview(95 percent as compared to 73 percent for group B.) This suggests that while there is little difference in earning performance when the men were working in their area of specialty, "A" group trainees were perhaps better able to adjust to conditions out of their area of specialty. This is treated further in a subsequent section of the report regarding the effects of general education.

EFFECTS OF VOCATIONAL TRADE EDUCATION

A major principle which the research was designed to test was the assertion that training for specific skills was better than no training. Accordingly, much of these follow-up data permitted comparisons between the combined experimental groups and the combined control groups. This phase of the study afforded the testing of significance of differences due to technical-general education and technical education vis a vis no training at all and the Hawthorne Effect. The groups were compared on the following indices:

1. Length of employment
2. Stability of employment
3. Weekly and yearly wages
4. Promotions or raises
5. The types of employment
6. Personal satisfaction

Table XI revealed that 83 percent of the experimental group and 66 percent of the control group were employed. A significantly higher percent of the experimental group (A and B) were employed than was the control group (C and D). This variance of difference was significant at the .01 percent level of confidence when the t-test estimated by determining the standard error of the difference between proportions was applied. This might show that men who received specific training were more likely to find employment than those who had not.

Table XI

SUMMARY OF NUMBER EMPLOYED IN EXPERIMENTAL & CONTROL GROUPS

	EXPERIMENTAL A&B		CONTROL C&D	
	N	%	N	%
Employed	69	83	43	66
Unemployed	14	17	22	34
TOTAL	83	100%	65	100%

T Score--2.41

There was little difference in the average number of weeks of employment between the experimental and control groups. This lack of divergence in weeks employed may suggest that the experimental groups were more aggressive in seeking employment in as much as the main control group and the subsidiary control groups were unrestrained from seeking employment in a relatively flush job market during the training year of the experimental and control groups. Tables XII and XIII revealed the total earnings of the experimental and control groups. These estimates were based on the number of respondents who reacted to each question. This accounts for the variability in the number of responses in each group. An analysis of the earnings showed that the highest, lowest and present weekly wages earned by the experimental group were significantly higher than that earned by the control group. This test of significant differences was applied by determining the standard error of the difference between two means, assuming the null hypothesis. The differences in each instance were significant below the .01 percent level of confidence. Fifteen persons in the experimental and 22 in the control group did not respond to the question relating to present salary. This was due perhaps to unemployment at the time of contact or to no response to the item. It was found that 69 men in the experimental(A & B) group were employed an average of 38 weeks at a mean weekly salary of $78. The control group, with 43 responses, were likewise employed 39 weeks at a mean weekly salary of $56. The approximate total amount earned over the period of employment was $191,825 and $96,613 respectively by the experimental and control groups, a difference of $95,212. Linear projects for a full year of employment would yield a difference of $145,924. (See Table XIII)

Table XII

STATISTICAL DIFFERENCE BETWEEN WEEKLY EARNINGS OF CONTROL AND EXPERIMENTAL GROUPS

	Average Weeks Employed	Number of Trainees	Mean Weekly Wages	Standard Deviation	"T"	Level of Confidence
PRESENT WEEKLY EARNINGS						
Experimental Group	38	69	$78.04	37.8	3.15	.01
Control Group	39	43	55.69	20.3		
HIGHEST WEEKLY EARNINGS						
Experimental Group	38	81	82.42	45.2	3.59	.01
Control Group	39	57	62.02	20.1		
LOWEST WEEKLY EARNINGS						
Experimental Group	38	80	62.63	24.5	3.06	.01
Control Group	39	58	51.73	17.0		

Table XIII

DISTRIBUTION OF EARNINGS FOR EXPERIMENTAL AND CONTROL GROUPS

Current Earnings	EXPERIMENTAL A & B	CONTROL C & D	Difference
Approximate Total Earnings	$191,825	$96,613	$ 95,212
Earnings Projected for One Year	280,864	134,940	145,924

It was interesting to note that the cost of the experiment to the taxpayers was $283,577. The Office of Education provided $148,577 to support the research and the Department of Labor under MDTA paid training allowances amounting to $135,000. An additional grant of $29,000 by an anonymous donor brought the total to $312,577. At the present employment rate of the men who were trained in the project(experimental group), the yearly earnings of only 69 or approximately 83 percent of the group would amount to $280,864. If the value of the project were evaluated in terms of the dollar value only, it would more than justify the expenditure in much less than five years.

Job Mobility

Job mobility may be vertical or horizontal. A horizontal change is much easier to detect than one which is vertical because a worker may consider a job change to be vertical if his working conditions improve although there is no change in pay. For purposes of this study, vertical mobility was classified as promotion in rank and/or raise in pay. Horizontal mobility was defined as a change from one job to another with no increase in pay.

Twenty-one percent of the men in the experimental group held only one job since graduation. Fifty-two percent held only one job in the control group. These data revealed further, as shown in Table XIV, that the percent holding one, two and three jobs in the experimental group was fairly evenly divided. In comparison, the control group showed a higher concentration of one job holdings with diminishing percentages as "number of jobs held" increased. A comparison of the number holding one to three jobs in each group revealed cumulative percentages of 81 and 80 by the control and experimental group respectively. There was some job change by 73 percent of men in the experimental group and job changes by 42 percent in control group.

Table XIV

FREQUENCY DISTRIBUTION OF JOBS HELD DURING YEAR BY EXPERIMENTAL & CONTROL GROUPS

Groups	NUMBER OF JOBS HELD AND PERCENT									
	0	Per Cent	1	Per Cent	2	Per Cent	3	Per Cent	4 or Over	Per Cent
Experimental	2	2.3	21	25.0	24	28.5	23	27.5	14	16.6
Control	4	6.1	34	52.3	11	16.9	9	13.8	7	10.7

The magnitude of job changes may be associated with the fact that a substantial portion of these men were engaged in the construction industry where the character of production generates considerable amount of job changing. Added to this, also, was the fact that some of the men had to go through a "shakedown" period with their newly acquired skills before settling into a permanent job.

Some of the job changes in the experimental group may be reflected in the fact that significantly more vertical mobility was experienced by the experimental group as may be seen in Table XV. This divergence of difference between proportions of the control and experimental groups on promotions on any job since graduation yielded a t-score of 2.40 which was significant below the .05 percent level of confidence. Similarly, comparisons of vertical mobility on present jobs produced a t-score of 2.93, a significant difference at the .01 percent level. (See Table XVI) These data would seem to leave little doubt that there was greater vertical mobility in the experimental group than there was in the control group.

Table XV

NUMBER OF PROMOTIONS ON ANY JOB DURING YEAR

Summary	EXPERIMENTAL		CONTROL		ALL	
	N	Percent	N	Percent	N	Percent
Promoted	29	35	12	18	41	28
Not Promoted	43	52	53	82	96	65
Other	11	13	--	--	11	17
TOTAL	83	100%	65	100%	148	100%

T = 2.40 between Experimental(A & B) and Control(C & D) Groups

Table XVI

NUMBER OF PROMOTIONS ON PRESENT JOBS

Summary	EXPERIMENTAL		CONTROL		ALL	
	N	Percent	N	Percent	N	Percent
Received Promotions	23	28	8	12	31	21
Did Not Receive Promotions	47	57	57	88	104	70
Other	13	15	--	--	13	9
TOTAL	83	100%	65	100%	148	100%

No Difference between A & B; No Difference between C & D.

T = 2.93 between Experimental(A & B) and Control(C & D) Groups

Twenty representative job titles of jobs held by both the experimental and control groups are listed below:

JOB TITLES

Experimental Group(A & B)	Control Group(C & D)
1. IBM Mechanic	1. Forklift Operator
2. Building Maintenance Man	2. Short Order Cook
3. Mechanic's Helper	3. Laborer
4. Welder Apprentice	4. Janitor
5. Electronic Installer	5. Home Products Salesman
6. Car Salesman	6. Stevedore
7. Rigger	7. Chauffeur
8. Heavy Equipment Mechanic	8. Grocery Bagger
9. Spot Welder	9. Night Watchman
10. Building Demolisher	10. Paint Cleaner
11. Bricklayer	11. Hotel Porter
12. Electrical Maintenance Man	12. Stockman
13. Sheet Metal Helper	13. Warehouseman
14. Motor Vehicle Dispatcher	14. Truck Driver
15. Washing Machine Mechanic	15. Iron Melter
16. Auto Mechanic	16. Playground Worker
17. Landscaper	17. Meat Cutter
18. Janitor	18. Roofing Helper
19. Painter	19. Repairman
20. Truck Driver	20. Ministry

An inspection of these job titles revealed that most of the jobs held by the control group were jobs which required little or no pre-employment training. On the other hand, most of the jobs held by the experimental group seem to be in/or related to some trade or technology. Most of the jobs held by the experimental group required varying degrees of pre-employment training. There appears to be a definite difference in the types of jobs held by the two groups which were reflected in wages earned. (See Table XIII)

Job satisfaction is a condition which must be deduced from one's own image of his relationship with his job. An attempt at gaining some insight into the degree of job satisfaction was made by asking respondents to react to a set of questions in which answers were provided in five degrees ranging from strongly agree to strongly disagree. Shown on the accompanying summary table XVII are the extreme responses to some of these statements. In response to the statement, "My Job is a Good Paying Job," 12 percent of the experimental group strongly disagreed and 43 percent of control group strongly disagreed. Forty-seven percent of the experimental group disagreed while 81 percent of control group disagreed. In response to the statement, "Chances of Getting Ahead in My Job Are Good," 19 percent of the experimental group disagreed as compared to 43 percent of the control group. Similar disparities were shown in responses to statements indicating a desire for job changes. There was some desire on the part of both the experimental and control groups to seek better pay, to desire better chances to get ahead and to find jobs with fewer problems. These data indicated, however, that in the areas questioned, the experimental group did not show as much dissatisfaction with their jobs as did the control group.

Table XVII

ATTITUDE TOWARDS PRESENT JOB

"My Job is a Good Paying Job"

Group	Number	Disagree %	Strongly Disagree %
Experimental	68	26	12 (T=3.46)
Control	41	58	43

"Chances of Getting Ahead Are Good"

Group	Number	Disagree %	Strongly Disagree %
Experimental	68	47	19*
Control	47	81	43

"Would Think A Long Time Before Changing Jobs"

Group	Number	Disagree %	Strongly Disagree %
Experimental	68	65	23
Control	47	62	62

"Another Job Would Relieve Me of Problems"

Group	Number	Agree %	Strongly Agree %
Experimental	68	39	25
Control	47	66	46

EFFECTS OF GENERAL EDUCATION

An important aspect of the research design was the provision for comparisons of the effects of general education in post-training behavior of the subjects as a test for the principle demonstrated regarding the efficacy of a combination general and technical education curriculum. Accordingly, much of the analysis of follow-up data was made on the basis of the men who received a combination of general and technical education (Group A) as compared to men who received technical training only (Group B).

Many differences were noted in the post-training behaviors of these groups. These differences became immediately apparent in the end-of-course evaluations by the technical faculty of prognoses of success and in test score gains. In addition to the expected gains in reading, arithmetic and I.Q., in favor of Group A, more men of the "A" group (general and technical education) were selected as "most likely to succeed" than in the "B" group (65 and 35 percent, respectively). (See Table XVIII) This divergence was significantly different when the test of Chi Square was applied. The .01 level of confidence was achieved in this test. This might indicate that persons who have been availed of general education experiences are able to demonstrate a more rapid development in technical competencies than those who have not. Table XIX contains summary data for test score changes.

Table XVIII

PERCENT OF "A" AND "B" GROUPS RATED "MOST LIKELY TO SUCCEED" BY TECHNICAL INSTRUCTORS

GROUP	Number	Percent	P*
A-(General and Technical Education)	39	65	.01
B-(Technical Education	44	35	-

* Significantly higher than paired group (Chi Square)

Table XIX

SUMMARY OF TEST SCORE CHANGES

TEST	Mean Pre-Training Score A	Mean Pre-Training Score B	Mean Post-Training Score A	Mean Post-Training Score B	Change A	Change B
Army Revised Beta	94.8	91.0	104.0	98.8	9.2*	7.8*
Gates Reading	8.0	7.6	9.8	7.9	1.8*	.3
(Gates Lower Half)[1]	5.2	5.4	7.7	5.4	2.5*	0
S.R.A. Arithmetic	35.4	24.8	38.3	24.3	2.9*	-.5
GATB I.Q.	83.0	79.6	87.9	83.4	4.9*	3.8*

* Significant at .01 level of confidence (test of t)

[1] Lower Half denotes men scoring beneath mean of total group

The number of men who were employed at the end of the follow-up period also indicated a difference in favor of the "A" group. A total of 95 percent of this group was holding jobs as compared to 74 percent of the "B" group. The significance of difference here reached the .01 level. Sickness and service in the Armed Forces were the factors which prevented the employment level of Group "A" from reaching the 100 percent mark. This finding might bear out the prognoses of success of the instructors and their implications to a degree. Table XX contains summary data.

Table XX

PERCENT OF GROUPS EMPLOYED
AT THE END OF THE FOLLOW-UP PERIOD

	Number Reporting	Number Employed	Percent	P*
A-(General and Technical Education)	39	37	95	.01
B-(Technical Education)	44	32	74	-
C-(Main Control)	32	19	59	-
D-(Placebo Control)	33	24	73	-

* Significantly higher than paired group (Chi Square)

Many of the differences indicated that perhaps general education might very well contribute to the development of a worker who is more ambitious than one who has not had these experiences. Further, this worker seems to be one who is more mobile and unafraid to venture into different but more profitable fields. Although 87 percent of the

"A" group stated that they would study the same trade again if given the opportunity and 100 percent received initial placements in their fields, 21 percent deliberately chose to change their jobs for others in related or completely different fields. Only 9 percent of the "B" group made such a choice. The small numbers here did not lend themselves well to statistical tests but the almost 3 to 1 ratio and the tests of significance seem to support the importance of this factor. The reason most often given for changes in jobs by the group was advancement. Table XXI contains summary data.

Table XXI

ATTITUDES OF "A" AND "B" GROUPS
TOWARD RE-SELECTION OF FIELD OF STUDY
AND
PERCENT CHOOSING TO WORK IN OTHER FIELDS

FACTORS	No. Report	No. in Group	Percent	No. Report	No. in Group	Percent	P*
Would Enroll in Same Field of Study Again	39	34	87	44	34	77	-
Deliberately Chose Other Field in Which to Work	39	8	21	44	4	9	.01

* Significantly higher than paired group (Chi Square)

Some of the examples of out-of-field mobility are the cases of the auto mechanic graduate who took a job selling cars, the sheet metal major who took on a technical book franchise and the electronics man who once managed a chain outlet for hamburgers but eventually returned to his trade. The assets of increased language facility, command of number concepts, insights into the world of work, and the operations of the economy, greater skills in presenting themselves and achieving good human relationships which were worked at in general education classes undoubtedly contributed to this mobility. An intangible, but very important set of factors may also have played an important role. These included the confidence in self and ability and the increases in self esteem which psychologists believe are important correlatives in increases in general education competencies. As these men better understood themselves and the world about them, their tendencies to step up and out of their niches and reach for higher more rewarding occupations became more pronounced and their fears of doing so less pronounced. Occupational mobility might be one of the more important competencies needed to fit the coming generations for the rapidly shifting occupational structure of cybernetics. A person who is equipped with general education to learn new things rapidly and who is equipped with the courage and drive to do so might be our work forces' most important product.

A very significant difference between the groups was the average weekly salary earned at the follow-up interview ($70 to $58 per week in favor of Group A). Although this average is a gross figure which describes the men as a whole regardless of whether employed, it is perhaps the most accurate measure available. Average salaries for the men in each group who were working at the time of the interview are higher in favor of Group B $77 to $73 , however; fewer men in this group were employed in the lowest paying job (maintenance) and more were employed in the highest (masonry). Ten masonry students completed training in Group B, were contacted and were working at the time of the interview. They averaged $110 per week in salary. Only six "A" group trainees completed training in this trade. Of this number, only four were contacted. Their salaries averaged $110 per week also. On the other hand, all of the eight maintenance graduates in the "A" group were working (at $54 per week) as compared to only five of the ten for the "B" group; averaging $38 per week in salary. When the average salary is computed with these two inequitous categories excluded, the average salaries for the groups are $65 to $63 per week in favor of the "A" group. If an extrapolation of the average salaries is made where a like number of men are employed in the masonry and maintenance trades for each group, the average salaries are $82 to $73 in favor of the "A" group. Group A also utilized a greater variety of sources in securing employment. While this group utilized friends and the Virginia Commission to a very great extent, Group B men tended to rely more on relatives. Tables XXII and XXIII contain summary data.

Table XXII

COMPARISONS OF AVERAGE WEEKLY SALARIES OF GROUPS

GROUPS	Number.	Salary Per Week At	P*
A-(General and Technical Education)	39	$70	.01
B-(Technical Education)	44	58	-
C-(Main Control)	32	34	-
D-(Placebo Control)	33	40	-

* Significantly higher than paired group (t-test)

Table XXIII

COMPARISON OF METHODS OF SECURING EMPLOYMENT OF "A" AND "B" GROUPS*

METHOD	A(37**)	B(33**)	[illegible]*
Virginia Employment Commission	19	15	-
College	19	18	-
Friends	30	15	.01
Relatives	2	21	.01
Self	30	31	-

* Significantly higher than paired group (Chi Square)

** Actual number responding to question

The most ringing testimony to the benefits of general education experience came from the men themselves. When asked to indicate significant contributions to their success, many listed experiences in the general education curriculum as being very important. Some quotes from the interview instrument follow:

"Communication skills in language arts classes helped a lot."

"Basic background was improved."

"Helped in Math and English recall. Learned to act and react under supervisors."

"Reading and Math gave new insights; know more about life-want more."

"Feel more confident in my work."

"Language arts helped me pass qualifying examinations for my job."

Both groups seemed quite satisfied with their jobs at the time of the interview. There was, however, a significant difference in the number who felt strongly about the appreciation of their work by customers in favor of the "A" group. This might suggest some hint of the incidence of added pride in work--the emergence of the true artisan concept, perhaps. Support for this thesis was also given by the significant difference in the number who felt their work was comparable to other workers. Group A workers seemed more convinced of this. Table XXIV contains further data.

Table XXIV

REACTION OF "A" AND "B" GROUP TO JOB SATISFACTION INDICES

Percent by Groups

REACTION ITEMS	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
	A	B	A	B	A	B	A	B	A	B
I have a good paying job	17	25	33	28	22	9	22	25	6	13
My work is pleasant	28	28	42	44	8	9	17	16	5	3
My boss helps with problems	18	28	45	47	18	9	15	9	4	6
My boss is considerate and understanding	24	19	52	66	15	6	9	3	0	6
My work is appreciated by the customers	36*	12	53	69	11	19	0	0	0	0
My fellow workers are a good gang	32	19	50	68	12	13	0	0	0	0
My chances of getting ahead are good	22	16	31	47	22	9	19	22	6	6
My work is as good as others	44*	28	47	60	6	6	3	2	0	0

* Significantly higher than paired group, at .05 level of confidence (Chi Square)

In summary, it would seem that the hypothesis tested in the design that there would be differences in post-training behavior of the subjects which could be attributable to the incidence of general education in the curriculum of one of the groups, was supported by these data. General education, it seems, contributed to the demonstration of a more rapid development of technical competencies by the men, a higher incidence of employment and a greater earning power. The data also indicate that general education might contribute to a greater utilization of community resources in securing employment, and to the development of an individual with tendencies and abilities toward upward mobility in occupations even to the extent of leaving his field of preparation to achieve this mobility and perhaps to a greater pride in craftsmanship.

PROBABLE EFFECTS OF PLACEBO EXPERIENCES

Another aspect of the research design was to determine what effect guidance and counseling alone as a treatment would have on unemployed men who were similar to men receiving vocational trade training. According to the plan, Group D or placebo group received personal and group guidance in semi-monthly sessions on a systematic preplanned basis. The underlying purpose was to enable researchers to estimate the extent to which changes may be due to the state of mind and being which comes from perceiving that one is a part of an experiment as well as the possible influence of guidance and counseling. The changes eminating from this treatment was defined as the "Hawthorne Effect."

The subsidiary control (Hawthorne) group was called together in night sessions at which times lectures, motion pictures and discussions of problems relating to manpower training and employment were considered. These night sessions were very well attended and participated in with serious concern. In response to questions from the group, specific problems were discussed and often acceptable solutions were arrived at through group discussions. In addition to the group sessions, many personal sessions were held with individuals who had special problems. It is believed that the placebo control group (Group D) was greatly aided by sessions which attempted to explain and demonstrate acceptable procedures for such functions as applying for a job, dealing with certain real problems on the job, learning where to look for employment, learning how to collect facts and ideas for use in planning for an interview with employment officials in presenting one's assets to the best advantage.

Group D was aware of the fact that its members were a part of an experiment relating to unemployed men. The keen interest of the group may have been attributed to three factors:

(1) A $10 allowance which was paid to each man for each night of attendance.

(2) Personal concern of the counselors for group members' problems.

(3) Hope of establishing some preference in the selections of trainees for the next training cycle.

The performance of the placebo group somewhat better than that of the main control group. Comparative data in table XXV showed, however, that this difference in performance was small and may be due to chance only. It may be observed that the major difference seemed to occur in the average number of weeks of employment. Further it was noted that fewer men in Group D were unemployed than in Group C but not to a statistically significant degree.

Apparently the treatment received by the subsidiary control group did not have the sustained effect which would make it significantly different from the main control group in the areas compared a year after the treatment was concluded. Table XXVI shows a summany of the comparison.

Comparison between experimental Group B and subsidiary control Group D reavealed that the wages of the experimental group exceeded those of the control group in each category compared. Total earnings of Group B exceeded total earnings of Group D by $54,491. Summary table XXVI shows the extent of difference between the salaries of each group. Only in average number of weeks employed Group D exceed Group B. At first glance this may seem significant but this difference may be due to difference in time available for employment, a difference of approximately twelve months, and a low unemployment labor market which consistently held at about 2.3 percent. Group D was seeking employment while Group D was undergoing training. While Group B was seeking employment immediately after graduation, many in Group D were already employed.

Group D (control group) reacted to two pertinent questions regarding current employment in a manner which indicated that a substantial number in the group was not pleased with their employment. When asked to react to the statement "My job is a good paying job," 25 percent strongly disagreed as compared to 13 percent in Group B. Twenty-five percent strongly disagreed with the statement "Chances of getting ahead were good." Group B registered 6 percent. These differences might indicate a difference in job satisfaction.

Table XXV

COMPARISON BETWEEN CONTROL GROUPS (C & D)

	Group C	Group D	Difference
1. Average of Weeks Worked	36 wks.	41 wks.	5 wks.
2. Average of Lowest Salaries	$46	$50	$4
3. Average of Highest Salaries	$59	$58	$1
4. Average of Present Salaries	$55	$55	None

Table XXVI

COMPARISON BETWEEN EXPERIMENTAL GROUP "B" AND CONTROL GROUP "D"

	Group B	Group D	Difference	Level of Confidence
1. Average of Weeks Worked	35	41	6	NSD*
2. Average of Lowest Salaries	$57	$50	$7	NSD*
3. Average of Highest Salaries	$82	$58	$24	.01
4. Average of Present Salaries	$80	$55	$25	.01
5. Approximate (Total) Amount Earned During Year (Based on all Jobs Held and Number of Weeks Actually Worked	$122,657	$68,166	$54,491	

* No Significant Difference

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The following summary, conclusions and recommendations are based upon the total findings and products of the project which have extended thus far up to the present:

1. Findings from experimental experiences in recruiting, selecting, training, placing and follow-up of unemployed men constituting the experimental groups in the project.
2. Findings from the analyses of comparative data concerning experimental and control groups on employment and earnings as an index of the effectiveness of this project.

CONCLUSIONS AND RECOMMENDATIONS

PURPOSE (RECAPITULATION)

The purpose of this project was to demonstrate and evaluate certain principles of teaching and learning which have derived from research in adult education, in the recruitment and training of unskilled unemployed workers. These principles are:

1. Unskilled unemployed adults can learn a new set of occupational skills in an intensive 12-month program which is designed to take into account the personal attributes typical of persons in their life situation.
2. Unskilled adults can learn enough skills and information values essential for qualifying for certain trades when training in General Education (language arts, number skills, occupational information, and human relations) and a guidance supplement are given along with vocational training in the 12-month period.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The following summary, conclusions and recommendations are based upon the total findings and products of the project which have exceeded those set up in the proposal:

1. Findings from experimental experiences in recruiting, selecting, training, placing and following-up of one-hundred men constituting the experimental groups in the project.
2. Findings from the analyses of comparative data concerning experimental and control groups on employment and earnings as an index of the effectiveness of this project.

PURPOSES (RECAPITULATION)

The purpose of this project was to demonstrate and evaluate certain principles of teaching and learning which have evolved from research in adult education, in the recruitment and training of unskilled unemployed workers. These principles are:

1. Unskilled unemployed adults can learn a new set of occupational skills in an intensive 12-month program which is designed to take into account the personal attributes typical of persons in their life situations.
2. Unskilled adults can learn enough skills and internalize values essential for qualifying for certain trades when training in General Education (language arts, numbers skills, occupational information, and human relations) and a guidance supplement are given along with vocational training in the 12-month period.

3. Correlatives of the preceding are:
    (a) When the combination of General Education, Vocational Training, and Guidance is given, there is an improvement in abilities as measured by standardized tests.
    (b) Good employment adjustment (as indexed by getting and holding a job after training, etc.) will be a subsequent correlate of successful completion of the General Education-Vocational Program.
4. That certain standardized tests of aptitudes and intelligence as well as certain inventories of interest have:
    (a) predictive value in the selection of trainees who are unskilled unemployed adults.
    (b) utility in the development of the materials and the training program appropriate for this group.
5. That General Education supplemented with counseling are essential correlates of vocational training if adult unskilled workers are to make good adjustments in their new occupations.

SUMMARY OF FINDINGS

The study of the characteristics of the subjects of the demonstration revealed an average age of 30, with 1.9 dependents. There was a wide dispersion of formal education background ranging from less than six grades to some college work. The grade level given by trainees at the initial interview appeared to exceed the grade achievement level scored on standardized tests.

Recruitment

1. Recruitment of trainees was accomplished by conducting an aggressive recruitment program which involved participation by community organizations in addition to the regular news media and the State Employment Service.

2. Approximately three-fourths of the trainees did not achieve acceptable scores on the General Aptitude Test Battery but did profit by the training and successfully passed the courses.

3. Interest, previous work experience, physical fitness, economic factors and education were considered important factors to supplement the General Aptitude Test Battery in selecting hard core trainees.

Skilled Procedure

1. Local employers and employees, whose occupational interests were associated primarily with the five trades offered in the project assisted in pinpointing the type of employable product which could be developed in a one-year training program and also concurred on course content.

2. Teacher competency was an important aspect of the technical training.

3. Live-job supplement to the in-shop trade training provided an easy transfer from training to employment.

General Education Procedure

1. The design of the project provided for a comparison of the efficacy of a combination general and technical education curriculum with a technical curriculum. Half of the trainees were enrolled in the combination curriculum.

2. The general education group received instruction in reading, language arts, numbers skills and occupational information and human relations in addition to the instruction in technical skills. In addition, supervised study, enriched curriculum activities and work on a project newspaper were provided.

3. An important procedure in the combination curriculum was the meshing of general and technical instruction. This was done to achieve greater motivation. It was accomplished by basing much of the general instruction on object lessons from the technical core.

4. A second important procedure was the development of much of the learning materials by the general education faculty. This was necessary because of a dearth of materials described above.

Effects of Training

1. A significantly higher percent of persons who received training (the experimental group) were employed when compared with the group which did not receive training (the control group).

2. There was no difference in the average number of weeks employed between the experimental and control groups but the rate of pay for the experimental group was significantly higher.

3. Total earnings of the experimental group exceeded that of the control group by $108,154 and yearly earnings by $145,924.

4. Twenty-one percent in the experimental group held one job during the year as compared to 52 percent who held one job in the control group. The number in each group who held from one to three jobs in each group was similar.

5. The experimental group experienced a significantly greater percent of promotions on all jobs and on the jobs held at time of contact than did the control group.

6. The experimental group seemed to hold jobs which, for the most part, required some pre-employment training while most jobs held by members in the control group required little or no pre-job training.

7. The experimental group expressed greater job satisfaction than did the control group.

Effects of General Education

1. The effects of general education on post-training performances of the men who completed the combination curriculum (Group A) were numerous and readily identifiable. They included higher ratings by instructors and higher test scores, higher salaries and higher indications of job satisfaction.

2. Instructors rated more of these men as "most likely to succeed." The percentages of "A" and "B" group so ranked were 65 and 35, respectively, in favor of group A.

3. Men in "A" group gained an average of 9.2 points in I.Q. as measured by the Army Revised Beta Intelligence test; 1.8 years on the Gates Reading Survey; 2.9 percentile ranks on the S.R.A. Test of Arithmetic and 4.9 points on the GATB I.Q. test. Men in the lower half of the group as measured by standardized tests seemed to benefit more from the instruction. Gates Reading score gains, for example, were 2.5 grades for the lower half as compared to 1.8 grades for the total.

4. More men in the "A" group were employed at the time of the interview, 95 to 74 percent. The gross average weekly salaries for the group were higher, $70 to $58. When the variation between groups in unemployment and employment in high and low-paying jobs is compensated for through extrapolation, the average weekly salary difference was $82 to $73 in favor of group A.

5. Men in group A utilized a larger variety of methods to secure employment and more of the men deliberately sought higher paying, higher status jobs outside their fields. Insightful testimony of the benefits of general education was given during the interview.

6. Men in group A exhibited a high incidence of job satis-- faction. This seemed especially true in replies to items indicating pride in work and the feeling that customers appreciated it.

Placement and Follow Up

1. Employment experiences of graduates were generally good. Only one graduate did not work during the year. This graduate stopped looking for work after several refusals due to loss of sight in one eye. He was on pension from the railroad.

2. Fifty-six percent of graduates who took general education were working in trade or related fields trained for in the project.

3. At the time follow-up interviews were conducted, forty-- five percent of all graduates were working in trades corresponding to their training or in areas related to their trades; sixteen percent were working in jobs not related to their trades but in positions as journeymen, apprentices, learners, helpers or in some ca-

pacity leading to craftsmen's rating; eight percent were in jobs not related to the trades of their training; seven percent were employed in unskilled jobs not related to their trades; and sixteen percent were unemployed.

4. Sixty-four or 77 percent of the graduates at some time during the year worked in their trade or related fields for an average of 7.02 months at an average weekly salary of $80.09.

5. Data collected in follow-up interviews revealed a job picture somewhat different from the overall employment picture. Fewer persons were working in their trade or trade-related fields and slightly more persons were unemployed. Some trainees classified as unemployed were between jobs.

6. Certain graduates who were not engaged in occupations corresponding to the areas of their specialized training indicated that the reasons for their employment status were: "lack of required experience," "pay too low," "age problem," "can't find job I want." Twelve men or 14 percent of the graduates were working in non-trade related jobs by choice. These decisions were made primarily because of better pay and chances for promotion.

7. Age was a factor affecting the employment of some trainees. It did not appear that age alone was a deterrent but age combined with the lack of a particular kind of experience or some other factor was sufficient for employers to deny employment applications.

8. Court records, mostly misdemeanor or minor categories, were barriers to employment, especially in government installations and in large companies where consideration for employment was based on paper records.

9. An unusual number of building maintenance graduates left their jobs or refused to accept jobs in their field because of "low pay" in that occupational field.

10. The subsidiary control (placebo) group did not reveal significant differences from the main control group in the following areas: average of lowest, highest and present salaries, and the percent of employment. Placebo group averaged five more weeks of employment than the main control group.

CONCLUSIONS

In view of the total findings and products of this project it is concluded:

1. That unskilled, unemployed adult workers can be provided with salable skills in Auto Mechanics, Electronics, Maintenance, Masonry and Sheet Metal by applying adult education principles in one-year training programs.
2. That individual guidance plus trainee involvement in the solution of trainee problems makes identifiable improvements in trainee attitudes that would affect employability.
3. That a longer period of follow-up and guidance will be required to enable trainees with attitude and personality problems to make adjustments up to employer acceptability.
4. Of the various predictive indices, the teachers' ratings of probable success are the most reliable.
5. Wide dissemination of information is the key to successful recruitment of hard core unemployed. Full use must be made of the communication channels commonly used by the group involved.

6. Special techniques are required to recruit, train, and place men who are considered hard core unemployed.
7. In the selection process, the trap of taking only the top must be avoided. There must be some persons in the course, however, who will be successful and who will help support the others along the way.
8. The results revealed, from no one instrument should be the sole c iteria for selecting trainees to MDTA programs. Judgment, based on interest, work experience, need, education and age, should supplement any objective instrument used for determining an applicant's real ability to profit by systematic instruction.
9. Successful placement requires close liaison, before and after placement, between the employer and the placement officer.
10. The financial and other efforts required to train the ninety men were amply justified. Men who received training got better jobs, earned more money, got more promotions on the job and registered greater job satisfaction than men in similar group who were not afforded that opportunity. The total cost of the project could be repaid through taxes on money earned by the group in a period of less than five years.
11. Although guidance seemed to motivate some trainees and provide the knowhow for applying for and finding employment in the early stages of the experiment, it alone did not have the sustaining power to reveal any real difference at the end of a years employment.

12. Limitations in employment imposed by minor court records presents an obstacle to placement. If the government is to perform its full obligation in the process of getting MDTA trainees employed, it must assume some responsibility for finding special employment for people so affected.
13. That general education enhances the ability of adult trainees to gain and demonstrate competency in technical studies.
14. That general education enhances the ability of trainees to achieve on standardized tests of ability, aptitude and intelligence. This will, in turn, enhance their ability to qualify for employment in occupations requiring standardized tests for entrance.
15. That general education enhances the employability and earning capacities of the trainee.
16. That general education contributes to the development of a worker who is mobile, ambitious and who exhibits a pride in craftsmanship.
17. That general education curriculums which consists of language arts, reading, number skills, occupational information, and human relations meet the needs of adult, untrained and unemployed workers who are pursuing a technical training course.
18. That general education curriculums are enhanced by the inclusion of well planned laboratized experiences such as project newspapers and unit problems.

19. That general education curriculums are enhanced by the inclusion of well planned curriculum activities such as forums, lectures and visiting professors.
20. That general education materials of instruction enhance the motivation of the trainees if they are meshed as closely as possible with the technical area the trainee is studying.

Administration

1. That interdisciplinary team administration of the project multiplied the backgrounds and knowhow in making decisions, in setting policies, and in taking joint action required to cope with problesm. The human relations factor sometimes delayed decisions, especially when one or more members of the team became protagonists for a tenet of his discipline. However, the advantages exceed the disadvantages.

2. That the organization of the program so as to involve trainees and the staff in meaningful activities such as the Trainee Council, and the Trainee Loan Association increases morale and human relations.

3. That human relations of trainee to trainee and of trainee to staff can be maintained at an acceptable level and improved progressively through the project.

4. That a basic factor in the administration of a project for trainees that have been chronically unemployed is the commitment of the entire staff that the primary objective of the project to do everything possible to assist each trainee in making good.

Counseling

1. That trainees will accept and profit by counseling when counseling is directed toward their learning and personal-development potentials.

2. That the cooperation of housing, court, and other officials when secured by counselors serves not only to solve the immediate problem, but also adds to trainees determination to make good.

3. That to be effective, counseling must begin where each trainee is emotionally and intellectually, and proceed at a rate the trainee can move toward problem solution.

RECOMMENDATIONS

In view of the findings and conclusions of this project it is recommended:

1. That the know-how gained by the team and staff of this project be institutionalized by establishing at Norfolk State College a Regional Vocational Technical Center which will provide Vocational Technical Multilevel Training, Vocational Technical Teacher Education, Curriculum Laboratory, Library and Research Laboratory.
2. That future studies of chronically unemployed provide expanded treatments of trainees for physical and attitudinal development along with skill treatments.
3. That future skill--General Education instructional programs provide trainees with expanded motivation and skills required for continued updating and upgrading on the job.
4. That provision be made for three to five year follow-up of trainees to be conducted together with inservice training and counselling to discover potentials for upgrading and updating of trainees as well as to salvage special cases, needing more than one year.
5. That where feasible interdisciplinary teams be developed for project planning, administration and evaluation.
6. That counselling programs involve a social worker plus other team members. Also, trainee Council Members, trainee shop foremen and other trainees with special potentials should be involved to identify and interpret implications of problems on which counselling may be focused.

7. That realistic money management instruction and experiences be provided trainees with a view toward helping them to get ahead financially.
8. That services of other social agencies should supplement the efforts of MDTA. Surplus food and free medical care could do much to help solve the problem of attrition associated with MDTA program.
9. That greater emphasis be placed on the positive and much less on the negative factors of hard core training. Negative publicity tend to make many competent people reluctant to get involved in projects engaged in the training of the disadvantaged.
10. That project directors be aware of trainees who have crucial problems such as: court records, bad service discharge and bad debts prior to selection. This does not mean that such men should not be served, but that this information will make it possible for early plans for their placement.
11. That the fruit of the training be reevaluated after 5 years in terms of work affiliations of graduates, their earning capacity, and their total involvement in community affairs.
12. That somewhere in government small teams of experts be established for the purpose of assisting smaller institutions prepare proposals. Some institutions with excellent ideas may prepare weak proposals and therefore have them rejected. On the other hand, much time may be lost by an institution while learning the techniques of preparing government proposals.

13. General education should constitute an integral aspect of technical training programs for unskilled, unemployed adults. This general education should consist of more than the narrowly conceived basic or fundamental literacy education commonly associated with such programs; it should be a broadening, insightful type of education which broadens the individuals' concepts of himself and his environment.
14. General education instruction in technical programs should transcend the common practice of limiting instructional personnel to vocational specialists. Unemployed and unskilled men can benefit greatly from teachers from the humanities, science and mathematics and other disciplines.
15. Research in general education should be directed toward the problems of efficacious methods of meshing technical and general education; changing attitudes, developing program materials and toward programmed learning.
16. Research in general education might also be directed toward the short and long range impact of instruction on the family unit of the trainees. What are the changes in attitudes, concepts, aspirations and approaches of various members of the family as a result of increased competency in general education? Are the children more intelligent? Do they persist long in school? How much of this, if such exists, is attributable to general education?

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APPENDICES

APPENDIX I

CHARACTERISTICS OF GROUPS

Chart 1

AGE DISTRIBUTIONS OF EXPERIMENTAL AND CONTROL GROUPS

Age*	Group A	Group B	Group C	Group D	TOTAL
16 - 20	2	2	14	7	25
21 - 25	15	17	9	12	53
26 - 30	9	10	7	10	36
31 - 35	3	4	4	9	20
36 - 40	4	10	2	3	19
41 - 45	4	2	2	6	14
46 - 50	4	2	3	2	11
51 - 55	1	0	2	0	3
56 - 60	1	0	3	1	5
TOTAL	43	47	46	49	185

*Average Age of Group A = 31 yrs.
Average Age of Group B = 29 yrs.
Average Age of Group C = 31 yrs.
Average Age of Group D = 30 yrs.

Median Age for Total = 28.1 yrs.
Quartile^1 = 23.0 yrs.
Quartile^3 = 37.2 yrs.

Average Age of Total Groups = 30 yrs.

Chart 2

AVERAGE AGE OF TRAINEES (BY TRADES)

Trade	Group A	Group B	Average Age* of Total Trade
Auto Mechanics	31 yrs.	26 yrs.	29 yrs.
Electronics	33 yrs.	28 yrs.	30 yrs.
Maintenance	39 yrs.	32 yrs.	36 yrs.
Masonry	24 yrs.	29 yrs.	27 yrs.
Sheet Metal	28 yrs.	32 yrs.	30 yrs.

*Age of Trainees upon entering the Project.

PRECEDING PAGE MISSING - Chart 2

Chart 3

NUMBER OF DEPENDENTS OF EXPERIMENTAL AND CONTROI GROUPS

Number of Dependents*	Group A	Group B	Group C	Group D	ALL
0	8	9	14	11	42
1	9	16	10	12	47
2	9	7	8	10	34
3	5	10	7	9	31
4	6	3	1	1	11
5	4	1	5	3	13
6	1	0	1	2	4
7	1	0	0	1	1
8	0	0	0	0	0
9	0	0	0	0	0
10	0	1	0	0	1

*Wives not counted as dependents.

Chart 3a.

SUMMARY OF AVERAGE AND MEDIAN AGES FOR GROUPS

	Group A	Group B	Total Experimental	Group C	Group D	Total Control
Median Number of Dependents	2.5	1.9		1.9	2.2	
Average Number of Dependents	2.5	1.9	2.2	2.0	1.9	1.9

Average Number of Dependents for all groups(A,B,C, & D) = 1.9

Median Number of Dependents for all groups(A,B,C, & D) = 2.2

Chart 4

GRADE LEVELS OF EDUCATION
OF
EXPERIMENTAL AND CONTROL GROUPS

Grade Completed	Group A	Group B	Group C	Group D	ALL (A,B,C, & D)
0 - 2	0	0	6	0	6
3 - 4	1	0	2	1	4
5 - 6	0	3	2	2	7
7 - 8	7	7	5	6	25
9 - 10	11	16	11	19	57
11 - 12	19	17	16	17	69
13 - 14	4	3	4	3	14
15 - 16	1	1	0	1	3
TOTAL	43	47	46	49	185
AVERAGES	10.6	10.3	8.7	10	9.9

SUMMARY

Average Grade Completed of Total Experimental Group(A & B)	10.4 yrs.
Average Grade Completed of Total Control Group(C & D)	9.3 yrs.
Difference	1.1 yrs.

Chart 5

GRADE LEVELS OF EDUCATION OF EXPERIMENTAL GROUP(A & B)
(By Trades)

Grade Completed	Auto Mech.		Elect.		Main.		Masonry		Sheet Metal		
	A	B	A	B	A	B	A	B	A	B	ALL
0 - 2	0	0	0	0	0	0	0	0	0	0	0
3 - 4	0	0	0	0	1	0	0	0	0	0	1
5 - 6	0	1	0	0	0	0	0	1	0	1	3
7 - 8	2	1	2	0	2	3	1	1	0	2	14
9 - 10	1	3	1	3	3	3	1	5	4	2	26
11 - 12	5	5	4	5	2	1	4	3	5	4	38
13 - 14	0	0	2	0	1	1	0	0	1	1	6
15 - 16	0	0	1	0	0	1	0	0	0	0	2
TOTAL	8	10	10	8	9	9	6	10	10	10	90
AVERAGES	10.4	9.9	11.6	11.1	9.4	10.1	10.5	9.6	10.6	10.1	10.3

Chart 6

BETA SCORES OF EXPERIMENTAL AND CONTROL GROUPS

Range	EXPERIMENTAL			CONTROL			ALL
	A	B	Total	C	D	Total	Experimental & Control
120 - 116	0	0	0	1	0	1	1
115 - 111	4	0	4	2	0	2	6
110 - 106	3	5	8	2	2	4	12
105 - 101	7	4	11	6	1	7	18
100 - 96	6	7	13	0	9	9	22
95 - 91	5	4	9	11	10	21	30
90 - 86	2	4	6	4	8	12	18
85 - 81	1	1	2	5	6	11	13
80 - 76	3	2	5	3	7	10	15
75 - 71	0	4	4	4	1	5	9
70 - 66	1	1	2	2	1	3	5
65 - 61	0	0	0	1	0	1	1
60 - 56	0	0	0	0	0	0	0
55 - 51	0	0	0	0	0	0	0
50 - 46	0	0	0	0	0	0	0
45 - 41	0	0	0	0	1	1	1
TOTAL	32	32	64	41	46	87	151
	A=97.16 M=99.33 R=68-115	A=92.75 M=95.00 R=68-110		A=90.43 M=91.68 R=63-116	A=87.02 M=90.37 R=44-107		Avg.=91.31 Med.=93.25 Q^1 =83.61 Q^3 =100.82 Range = 44-116

Chart 7

COMPARISON BETWEEN EXPERIMENTAL & CONTROL GROUPS BETA SCORES

	EXPERIMENTAL A&B	CONTROL C&D	Difference
Average	94.94	86.63	6.42
Median	97.54	91.12	6.42
Quartile^1	88.50	81.79	6.71
Quartile^3	104.18	96.69	7.49
Range	68 - 115	44 - 116	44 - 116

Chart 8

DIFFERENCES IN EXPERIMENTAL GROUPS AND CONTROL GROUPS BETA SCORES

	A	B	Difference	C	D	Difference
Average	97.16	92.75	4.41	90.43	87.02	3.41
Median	99.33	95.00	4.33	91.68	90.37	1.31
Quartile^1	92.00	85.00	7.00	81.25	82.25	1.00
Quartile^3	105.28	102.25	3.03	104.75	96.28	8.47

Chart 9

DIFFERENCES IN B & C AND B & D GROUPS BETA SCORES

	B	C	Difference	B	D	Difference
Average	92.75	90.43	2.32	92.75	87.02	5.73
Median	95.00	91.68	3.32	95.00	90.37	4.63
Quartile^1	85.00	81.25	3.75	85.00	82.25	2.75
Quartile^3	102.25	104.75	2.50	102.25	96.28	5.97

APPENDIX II

EMPLOYMENT AND EARNINGS

Chart 9

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Chart 10

WEEKS WORKED AND EARNINGS OF EXPERIMENTAL GROUP(BY TRADES)

Total in Trades	Trade	No. Used	Average Number Weeks Worked	Approximate Earnings*	Average Weekly Earnings	Average Earnings for 50 Weeks**
18	Auto Mechanics	16	35	$34,905	$62	$3100
18	Electronics	15	37	33,521	60	3000
18	Maintenance	18	35	36,565	58	2900
16	Masonry	k6	41	60,147	92	4600
20	Sheet Metal	18	40	47,451	66	3300
90	TOTAL	83	188	$212,589	$338	$16,900
	Avg. of Total		37.6 wks.	$42,518	$67	$3380

*Based on all jobs held and number of weeks actually worked.
**Average earnings if trade had worked the full 50 weeks.

SUMMARY:

The average number of weeks worked for all 83 trainees was 37.6 weeks which means that they worked 75 percent of the follow-up period, and their total earnings for this time amounted to $212,589.

Chart 11

WEEKS WORKED AND EARNINGS OF CONTROL GROUP

Total in Groups	Group	No. Used	Average Number Weeks Worked	Approximate Earnings**	Average Weekly Earnings	Average Earnings for 50 Weeks**
46	C	30	36	$57,214.56	$53	$2650
49	D	31	41	69,668.10	55	2750
95	TOTAL	61	77	$126,882.74	$108	$5400
	Avg. of Total		38.5	$63,441.38	$54	$2700

SUMMARY:

The average number of weeks worked for 61 members of the Control Group was 38.5 weeks which means that they worked 77 percent of the time and their total earnings for this time amounted to $126,883

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Chart 12

WEEKS WORKED AND EARNINGS OF INDIVIDUAL GROUPS IN EACH TRADE

Total In Group	GROUP A	NO. USED	Avg. No. Wks. Worked	APPROXIMATE EARNINGS	AVERAGE WEEKLY EARNINGS	AVERAGE EARNINGS FOR 50 Wks.
8	A. M.	7	39	$21,028.92	$77.03	$3,851.50
10	Elec.	7	42	18,486.80	62.88	3,144.00
9	Main.	9	28	15,715.24	62.36	3,118.00
6	Mas.	6	44	22.276.32	84.38	4,219.00
10	S. M.	10	41	27,045.60	65.96	3,298.00
43		39	194	$104,552.88	$352.61	$17,630.50
Avg. of Totals			39 wks.		70.52	3,526.10

Chart 12a.

Total In Group	GROUP B	NO. USED	AVG. NO. WKS. WORKED	APPROXIMATE EARNINGS	AVERAGE WEEKLY EARNINGS	AVERAGE EARNINGS FOR 50 Wks.
10	A. M.	9	31	$13,876.30	$49.74	$2,487.00
8	Elec.	8	32	15,034.00	58.73	2,936.50
9	Main.	9	35	20,850.05	66.19	3,309.50
10	Mas,	10	40	37,871.00	94.67	4,734.00
10	S. M.	8	38	20,395.20	67.09	3,354.50
47		44	176	$108,026.55	$336.43	$16,821.50
Avg. of Totals			35 wks.		67,29	3,346.30

Difference in avg. wks. worked = 4 wks. or 10%
Difference in avg. wkly. earnings = $3.23 or 4.5%
Difference in avg. earnings for 50 wks. = $161.80 or 4.5%

Chart 13

RANGE OF SALARIES MADE BY EXPERIMENTAL GROUP (TRADES) DURING FOLLOW-UP PERIOD

TRADE	AVERAGE OF LOWEST SALARIES	AVERAGE OF HIGHEST SALARIES	AVERAGE OF LOWEST AND HIGHEST SALARIES	AVERAGE SALARY AT END OF FOLLOW-UP PERIOD*
Auto Mechanics	$ 56,41	$ 66.54	$ 61.47	$ 56.15
Electronics	47.97	65.17	56.62	64.81
Maintenance	51.67	66.28	58.97	43.05
Masonry	79.80	123.74	101.77	109.90
Sheet Metal	59.79	81.56	70.67	69.49
Totals	$295.64	$403.29	$349.50	$343.40
AVERAGE OF TOTALS	$ 49.13	$ 80.66	$ 69.90	$ 68.68

Chart 14

CONTROL GROUP

GROUP	AVERAGE OF LOWEST SALARIES	AVERAGE OF HIGHEST SALARIES	AVERAGE OF LOWEST AND HIGHEST SALARIES	AVERAGE SALARY AT END OF FOLLOW-UP PERIOD*
C	$46.00	$ 59.00	$ 52.50	$34.00
D	50.00	54.00	52.00	40.00
Totals	$96.00	$113.00	$104.50	$74.00
AVERAGE OF TOTALS	$48.00	56.50	52.25	$37.00

* See explanation above.

APPENDIX III

GROUP REACTIONS TO FINAL INTERVIEW QUESTIONS

Chart 15

"NUMBER AND PERCENT OF PERSONS WHO ARE EMPLOYED IN THE TRADE FOR WHICH THEY WERE TRAINED"

	Experimental GROUP A		GROUP B		ALL	
	N	%	N	%	N	%
Employed in Trade	15	39	13	30	28	34
Not Employed in Trade	22	56	31	70	53	64
Other	2	5	--	--	2	2
TOTALS	39	100%	44	100%	83	100%

Chart 16

"NUMBER OF PERSONS EMPLOYED WHOSE JOB IS RELATED TO THE JOB FOR WHICH HE WAS TRAINED"

	GROUP A		GROUP B		A L L	
	N	%	N	%	N	%
Yes	22	56	15	34	37	45
No	15	35	24	55	39	47
Other	2	8	5	11	7	8
TOTAL	39	100	44	100	83	100

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Chart 17

"NUMBER OF PERSONS WHO WERE OR WERE NOT HELPED BY THE FEDERAL PROJECT IN ATTAINING A JOB"

	GROUP A		GROUP B		ALL	
	N	%	N	%	N	%
No Help	8	20	9	20	17	20
Some Help	10	26	12	27	22	27
Great Help	19	49	17	39	36	43
Other	2	5	6	14	8	10
TOTAL	39	100	44	100	83	100

Chart 18

"NUMBER OF PERSONS WHO DID OR DID NOT WORK IN THE TRADE FOR WHICH THEY WERE TRAINED"

	GROUP A		GROUP B		ALL	
	N	%	N	%	N	%
Yes	32	82	32	73	64	77
No.	7	18	12	27	19	23
Other	-	-	-	-	-	-
TOTAL	39	100	44	100	83	100

APPENDIX IV

GROUP REACTIONS TO JOBS HELD

Chart 19

"BOSS LIKES WORK"

SCALE	Group A		Group B		Group C		Group D		ALL(A,B,C, & D)	
	N	%	N	%	N	%	N	%	N	%
Strongly Agree	12	36	7	22	3	18	9	38	31	29.2
Agree	19	58	24	75	13	76	15	62	71	66.9
Undecided	2	6	1	3	0	0	0	0	3	3.0
Disagree	0	0	0	0	0	0	0	0	0	----
Strongly Disagree	0	0	0	0	1	6	0	0	1	.9
TOTAL	33*	100%	32	100%	17*	100%	24	100%	106	100.0%

*1. Armed Service(1 in group A; 2 in group C)
2. Self-Employed(3 in group A)

Chart 20

"FELLOW WORKERS HELP WITH PROBLEMS"

SCALE	Group A		Group B		Group C		Group D		ALL(A,B,C, & D)	
	N	%	N	%	N	%	N	%	N	%
Strongly Agree	7	21	3	10	2	12	5	22	17	16
Agree	19	56	18	60	9	53	11	48	57	55
Undecided	6	18	2	7	2	12	2	9	12	12
Disagree	2	5	7	23	3	18	4	17	16	15
Strongly Disagree	0	0	0	0	1	5	1	4	2	2
TOTAL	34*	100%	30*	100%	17*	100%	23*	100%	104	100%

*1. Armed Service(1 in group A; 2 in group C)
2. Self-Employed(2 in group A; 1 in group D)
3. Work Alone(2 in group B)

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Chart 21

"GET FAIR TREATMENT ON JOB"

SCALE	Group A		Group B		Group C		Group D		ALL(A,B,C, & D)	
	N	%	N	%	N	%	N	%	N	%
Strongly Agree	11	32	7	22	1	5.5	6	25	25	23
Agree	19	56	20	63	11	65.0	12	50	62	58
Undecided	3	9	3	9	2	12.0	1	4	9	8
Disagree	1	3	2	6	1	5.5	2	8	6	6
Strongly Disagree	0	0	0	0	2	12.0	3	13	5	5
TOTAL	34*	100%	32	100%	17*	100%	24	100%	107	100%

*1. Self-Employed(2 in group A)
2. Armed Service(1 in group A; 2 in group C)

Chart 22

"GET CRITICIZED UNFAIRLY BY BOSS"

SCALE	Group A		Group B		Group C		Group D		ALL(A,B,C, & D)	
	N	%	N	%	N	%	N	%	N	%
Strongly Agree	2	6	0	0	0	0	0	0	2	2
Agree	1	3	2	6	1	5	1	5	2	2
Undecided	2	6	1	3	2	12	4	17	9	9
Disagree	27	82	22	69	11	65	15	65	75	71
Strongly Disagree	1	3	7	22	3	18	3	13	14	13
TOTAL	33*	100%	32	100%	17*	100%	23*	100%	105	100%

*1. Armed Service(1 in group A; 2 in group C)
2. Self-Employed (3 in group A; 1 in group D)

PRECEDING PAGE MISSING

Chart 23

"WHITE MEN ARE FAIR GUYS"

SCALE	Group A		Group B		Group C		Group D		ALL(A,B,C, &D)	
	N	%	N	%	N	%	N	%	N	%
Strongly Agree	5	15	2	7	1	7	2	9.5	10	11
Agree	19	58	24	86	9	60	10	48	62	64
Undecided	5	15	2	7	2	13	7	33	16	16
Disagree	2	6	0	0	2	13	0	0	4	4
Strongly Disagree	2	6	0	0	1	7	2	9.5	5	5
TOTAL	33*	100%	28*	100%	15*	100%	21*	100%	97	100%

*1. Four self-employed(3 in group A; 1 in group D)
2. Eight with no white co-workers(4 in group B; 2 in group C; 2 in group D)
3. Three in Armed Service(1 in group A; 2 in group C)

Chart 24

"WOULD THINK A LONG TIME BEFORE CHANGING JOBS"

SCALE	Group A		Group B		Group C		Group D		ALL(A,B,C, &D)	
	N	%	N	%	N	%	N	%	N	%
Strongly Agree	10	28	7	22	2	12	4	17	23	21
Agree	8	22	10	31	2	12	2	8.5	22	20
Undecided	3	8	0	0	3	18	2	8.5	8	8
Disagree	9	25	13	41	5	29	8	33	35	32
Strongly Disagree	6	17	2	6	5	29	8	33	21	19
TOTAL	36*	100%	32	100%	17*	100%	24	100%	109	100%

*1. Three in Armed Service(1 in group A; 2 in group C)

PRECEDING PAGE MISSING

Chart 25

"ANOTHER JOB WOULD RELIEVE ME OF PROBLEMS"

SCALE	Group A		Group B		Group C		Group D		ALL(A,B,C, &D)	
	N	%	N	%	N	%	N	%	N	%
Strongly Agree	8	22	1	3	5	29.4	4	17	18	17
Agree	9	25	14	44	5	29.4	9	37	37	34
Undecided	4	11	6	19	5	29.4	3	13	18	16
Disagree	13	36	9	28	1	5.9	6	25	29	26.6
Strongly Disagree	2	6	2	6	1	5.9	2	8	7	6.4
TOTAL	36*	100%	32	100%	17*	100%	24	100%	109	100.0%

*1. Three in Armed Service(1 in group A; 2 in group C)

APPENDIX V

FORMS USED IN SECURING DATA

BEGINNING INTERVIEW FORM

CONFIDENTIAL PERSONAL DATA OF TRAINEES

NORFOLK DIVISION VIRGINIA STATE COLLEGE

DEMONSTRATION PROJECT IN THE RETRAINING OF ADULT WORKERS

1. Name ______________________________ Age __________

2. Birth Date ______________________ Marital Status ________

3. Dependents: No. __ Boys, ages ______ No. Girls, ages ______

   Others ______________

4. Home Address ____________________ Mailing Address ______

   ____

5. Circle the number corresponding to the highest grade you completed in school: 1 2 3 4 5 6 7 8 9 10 11 12 Higher than 13

6. Have you worked at or with any trade or trades: Yes ____ No ____

TYPE OF WORK YOU DID	EMPLOYER NAME	ADDRESS	APPROXIMATE TIME (In Months)

7. Did you have any trade training while you were in school? Yes ___ No ___

8. If yes in question 7, what was the trade? ________________

9. Do you have a close relative who is a tradesman? Yes ____ No ____

10. If yes, what trade? ______________________________

11. Do you have a close friend who is a tradesman? Yes _____ No ____

12. If yes, what trade? ______________________________

13. Would you go to school for a year in order to learn a trade if you could get some help from the Government? Yes _____ No _____

14. If answer to question 13 is "no", why not? ________________

____

____

15. Of the trades listed below, place a check opposite the trade in which you would desire training and place an (X) opposite your second choice.

______________Custodial Maintenance ___________ Sheet Metal

______________Auto Mechanics ___________ Electronics

______________ Masonry

16. Where were you employed? ______________________________

____

a. What type of work did you do? ______________________

____

17. When were you last employed? ______________________

18. How many jobs have you had within the last three years? ______

19. What would you say is the chief reason/s why you are unemployed at the present time? ______________________

____

____

20. List the amount you have to pay for each of these household expenses for your family.

Rent (per week) $ ______ Food (per week) $ ________
(per month) ______ (per month) ________

Fuel (per week) $ ______ Clothing (per week) $ ________
(Per month) ______ (per month) ________

Utilities (per week) $ ______, (per month) $ __________

a. How do you handle cost of school lunch for your children?

(per week) $ ____________ (per month) $ ____________.

b. Cost of your transportation from your home to the college shop.

(per week) $ ____________ (per month) $ ____________.

21. Does your wife work? Yes _______ No _______.

22. Do any other members of your household work? Yes ______ No ___.

23. Have you talked with your wife about this retraining program?

Yes ______ No _________.

24. If "no" to question 23, please list some of the reasons she gives for not wanting you to enter this project: ________________

____

____

____

25. Would you suggest that some member of the college talk with your wife about this project? Yes ____ No _______.

26. What are some of the things you read: a. Daily newspapers ____

____

b. Others (list them) ____

____

27. List some types of leisure-time activities that you do. ______

____

____

____

QUARTERLY FORM

FEDERAL RESEARCH TRAINING PROJECT

DAILY EMPLOYMENT HISTORY FORM

Name: Date:

DATE	YOUR EMPLOYER (Company)	YOUR JOB	YOUR PAY

EMPLOYMENT HISTORY FORM (continued...)

DATE	YOUR EMPLOYER (Company)	YOUR JOB	YOUR PAY

FINAL INTERVIEW FORM

FEDERAL DEMONSTRATION RESEARCH PROJECT D-054

FINAL EMPLOYMENT REPORT

NAME ____

PRESENT ADDRESS ______________________________________

______________________________ TELEPHONE ________

PART I

1. Do you have a job now? ______ Yes ______ No

2. What is the title of that job? ______________________

3. What kind of work do you do on your job? ______________

____

4. When did you start working on your present job? __________

5. On your present job, what was your starting salary when you began work? $________ per week $ ________ per hour

6. On your present job, what was your salary for the past week?

$ ________ per week $ ________ per hour

7. Have you been promoted while working for the man who is now your employer? ________ Yes ______ No

8. Who helped you most in getting your present job?

_____Virginia Employment Service ____Norfolk State College

_____Friends ____Relatives

_____Other (Please write name of person)____________________

9. How many jobs have you had since November 15, 1963? __________

10. What job have you held the longest? ____________________

a. Beginning salary per week? _______ Highest Salary? ________

11. Please list the last three jobs you held. Start with your present job and work back.

(1) Present Job.

Employer's Name ______________________________

Employer's Address ______________________________

Date you started the job ______________________________

Salary per week $ __________ $ __________ per hour

(2) Job before present job.

Employer's Name ______________________________

Employer's Address ______________________________

Date you started the job ____________ Date Left ______

Reason for Leaving ______________________________

____

Salary per week $ __________ per hour $ __________

(3) Job before the job above.

Employer's Name ______________________________

Employer's Address ______________________________

Date you started the job __________ Date Left __________

Reason for Leaving ______________________________

Salary per week $ __________ per hour $ __________

12. Have you been promoted on any job since November 15, 1963?

______ Yes ________ No (please explain) __________________

____

____

____

13. Have you been upgraded or given any higher rating on your job since November 15, 1963? _____ Yes ___ No (Please explain)

____

____

____

PART II

1. My job is a good paying job.

_____ Strongly Agree
_____ Agree
_____ Undecided
_____ Disagree
_____ Strongly Disagree

2. My work is pleasant because I accomplish something on my job.

_____ Strongly Agree
_____ Agree
_____ Undecided
_____ Disagree
_____ Strongly Disagree

3. My boss helps me with problems.

_____ Strongly Agree
_____ Agree
_____ Undecided
_____ Disagree
_____ Strongly Disagree

4. My boss is considerate and understanding.

_____ Strongly Agree
_____ Agree
_____ Undecided
_____ Disagree
_____ Strongly Disagree

5. My work is appreciated by the custormers.

_____ Strongly Agree
_____ Agree
_____ Undecided
_____ Disagree
_____ Strongly Disagree

6. My fellow workers are a "good gang."

____ Strongly Agree
____ Agree
____ Undecided
____ Disagree
____ Strongly Disagree

7. My chances of getting ahead on this job are pretty good.

____ Strongly Agree
____ Agree
____ Undecided
____ Disagree
____ Strongly Disagree

8. My work is as good as that of the other men who do the same work.

____ Strongly Agree
____ Agree
____ Undecided
____ Disagree
____ Strongly Disagree

9. My boss likes my work.

____ Strongly Agree
____ Agree
____ Undecided
____ Disagree
____ Strongly Disagree

10. My fellow workers help me with problems.

____ Strongly Agree
____ Agree
____ Undecided
____ Disagree
____ Strongly Disagree

11. I get fair treatment on my job.

____ Strongly Agree
____ Agree
____ Undecided
____ Disagree
____ Strongly Disagree

12. I get criticized unfairly by my boss.

____ Strongly Agree
____ Agree
____ Undecided
____ Disagree
____ Strongly Disagree

13. White men who work with me are fair guys.

____ Strongly Agree
____ Agree
____ Undecided
____ Disagree
____ Strongly Disagree

14. I would think a long time before changing jobs if one were offered me.

____ Strongly Agree
____ Agree
____ Undecided
____ Disagree
____ Strongly Disagree

15. If I were offered another job, it would relieve me of a lot of problems.

____ Strongly Agree
____ Agree
____ Undecided
____ Disagree
____ Strongly Disagree

16. List three things you like about your job.

(1) ____

(2) ____

(3) ____

17. List three things you do not like about your job.

(1) ____

(2) ____

(3) ____